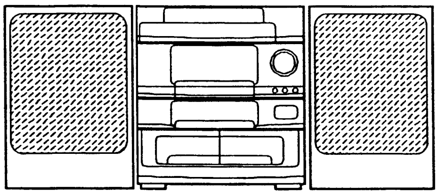
aiwa

aiwa
SERVICE

Z-M2500



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : TN-21ZSW-1406
- BASIC CD MECHANISM : 6ZG-1 DFNM

- TYPE: EZ, K, G

SYSTEM	CD-CASSEIVER	SPEAKER	REMOTE CONTROLLER
Z-M2500	CX-ZM2500 (TYPE: EZ, K,G)	SX-FZ2600	RC UNIT,6AS03

- If requiring information about the Speaker, see Service Manual of SX-FZ2600, S/M Code No.09-964-137-8FP

S/M Code No. 09-968-147-4FP

SERVICE MANUAL

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SPECIFICATIONS

<FM tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity(IHF)	16.2 dBf (1.8 µV, 75 ohms)
Antenna	75 ohms (unbalanced)

<AM (MW) tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<LW tuner section>

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	(without connecting to the SURROUND SPEAKERS) G: Rated: 40 W + 40 W (6 ohms, T.H.D. 10 %, 1 kHz) K: Rated: 31 W + 31 W (6 ohms, T.H.D. 1 %, 1 kHz/ DIN45500) Reference: 40 W + 40 W (6 ohms, T.H.D 10 %, 1 kHz/ DIN45324) EZ: Rated: 30 W + 30 W (6 ohms, T.H.D. 1 %, 1 kHz/ DIN45500) Reference: 38 W + 38 W (6 ohms, T.H.D 10 %, 1 kHz/ DIN45324) DIN MUSIC POWER: 73W +73W
Total Harmonic distortion	0.1 % (15 W, 1 kHz, 6 ohms)
Inputs	VIDEO/PHONE/AUX: 400mV (30kohms) MIC 1, MIC 2: 1.7 mV (10 kohms)
Outputs	CD DIGITAL OUT (OPTICAL) SUPER WOOFER: 1.4 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 16 ohms or more PHONES (ø6.3 mm stereo jack): accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	CrO_2 tape: 50 Hz – 16000 Hz Normal tape: 50 Hz –15000 Hz
Signal-to-noise ratio	48 dB (CrO_2 tape)
Recording system	AC bias
Heads	Deck 1: Recording/playback head x1/erase head x 1 Deck 2: Playback head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.03% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX–FZ2600>

Cabinet type	2 way, bass reflex with surround speaker
Speakers	Woofer: 220 mm ($8^{3}/_{4}$in.) cone type Tweeter: 80mm ($3^{1}/_{4}$ in.) cone type Super tweeter: 20 mm ($^{13}/_{16}$ in.) ceramic type Surround speaker: 80mm ($3^{1}/_{4}$ in.) cone type
Impedance	Front speaker: 6 ohms Surround speaker: 16 ohms
Output sound pressure level	88 dB/W/m
Dimensions (W x H x D)	260 x 444 x 275 mm ($10^{1}/_{4}$ x $17^{1}/_{2}$ x $10^{7}/_{8}$ in.)
Weight	5.3 kg (11 lbs 11 oz.)

<General>

Power requirements	G: 230 V - 240 V AC, 50 HZ K, EZ: 230 V, 50 HZ
Power consumption	G: 100 W K, EZ: 180 W
Dimensions of main unit (W x H x D)	360 x 395 x 374 mm ($14^{1}/_{4}$ x $15^{5}/_{8}$ x $14^{3}/_{4}$ in.)
Weight of main unit	8.8 kg (19 lbs 6 oz.)

- Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MA6-903-019		IB, E(ESF)-M
1	86-MA6-904-019		IB, E(EGI)-M<EZ>
2	86-MA7-701-019		RC UNIT, 6AS03
3	87-006-225-019		AM LOOP ANT NC2
4	87-A90-118-019		ANT,WIRE FM(Z)

CD DISASSEMBLY INSTRUCTIONS

1. ピックアップの交換方法

1）TRAY をｵｰﾌﾟﾝさせる。
stopperを矢印の方向へ押し、SHAFT SLED半分だけ抜く。

2）GEAR MAIN CAMを反時計方向（“a”の方向）に回し、figure 1のようにCDﾒを持ち上げる。

3）SHAFT SLED を抜く。

4）CDﾒｶを下げてPICK UPを交換する。

5）CDﾒｶをfigure 1のように上げて、SHAFT SLEDを取り付ける。

1. How to replace PICK UP.

1) Open the TRAY.
Push the stopper to arrow direction and release half of the SHAFT SLED.

2) Turn GEAR MAIN CAM to the counterclockwise (arrow “a”) direction, and lift up CD mechanism. (figure 1)

3) Remove SHAFT SLED.

4) CD mechanism in down position, replace PICK UP.

5) Lift up CD mechanism (figure 1), and Reassemble the SHAFT SLED.

2. 5巻ﾁｪﾝｼﾞｬｰﾌﾞﾛｯｸの外し方 (figure 2)

1）CD基板のFFC 2本を外し、ﾋﾞｽ5本を外す。

2）5巻ﾁｪﾝｼﾞｬｰﾌﾞﾛｯｸを後から持ち上げて外す。
（PANEL TRAY を外さなくても、5ﾁｪﾝｼﾞｬｰﾌﾞﾛｯｸを後から外すことができる。）

2. How to remove 5CD CHANGER BLOCK (figure 2)

1) Remove the two FFC of the CD circuit board, and remove the five SCREWS.

2) Lift 5 CD CHANGER BLOCK from behind, and remove it.
(5CD CHANGER BLOCK can be removed even if PANEL TRAY are not removed.)

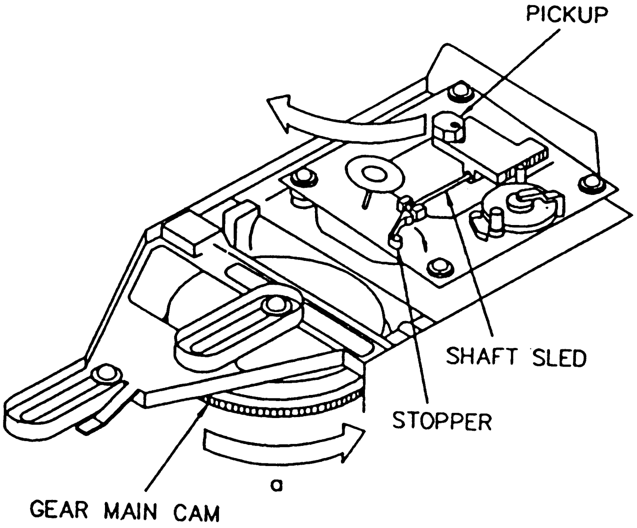


Figure 1

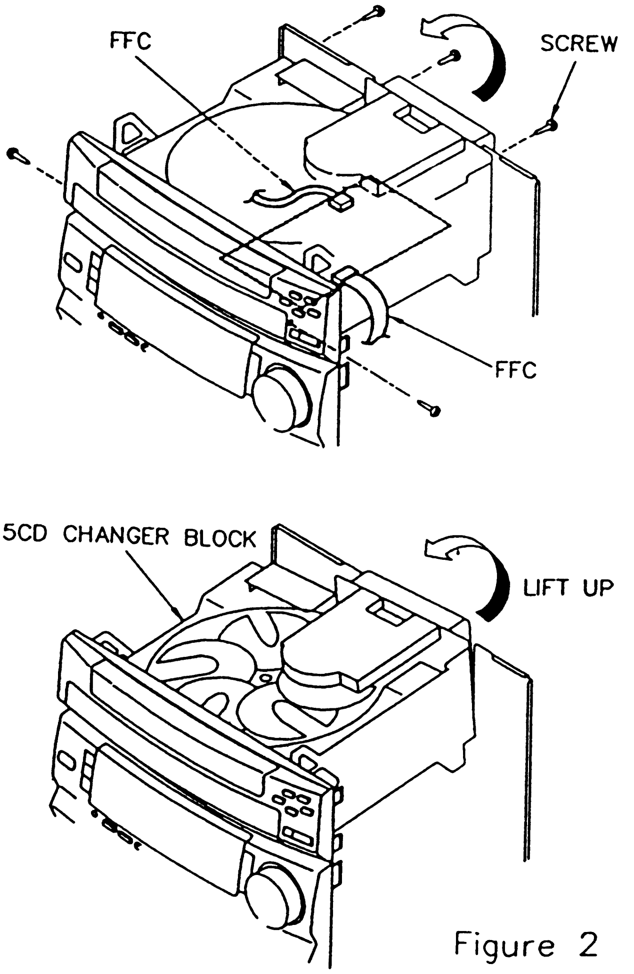


Figure 2

3TRAYの分解　組立て方法

（1）分解方法

1）CHAS MECHA 下部のPLATE GEARのﾎﾞｽを外側（矢印“b”方向）に強く押す。(figure 3)
（TRAYが少しせり出すのを確認する）

2）TRAYをｵｰﾌﾟﾝ位置まで引き出す。

3）FFCを抜き、両ｻｲﾄﾞのCHAS MECH ﾂﾒ（2ケ所）を押してTRAYを外す。(figure 4)

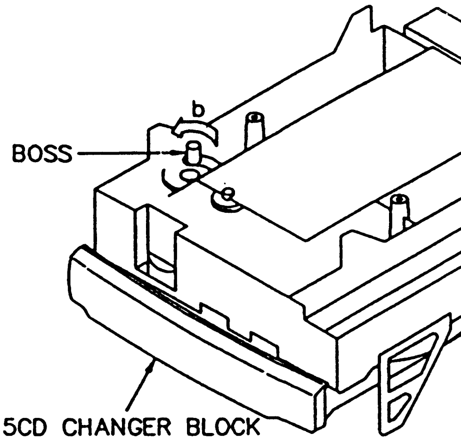


Figure 3

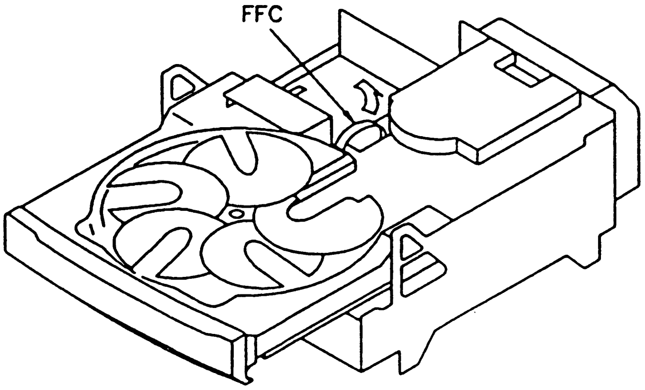
3. The disassemble and reassemble the TRAY

(1) Disassembling procedure.

1) Push the PLATE GEAR'S Bossat the bottom part of CHAS MECHA strongly to the outside (arrow “b” direction). (figure 3) (Confirm that TRAY appears a little in the front.)

2) Draw TRAY to the open position.

3) Remove FFC, and push the two LEVERS at both side of the CHAS MECH to remove TRAY. (figure 4)



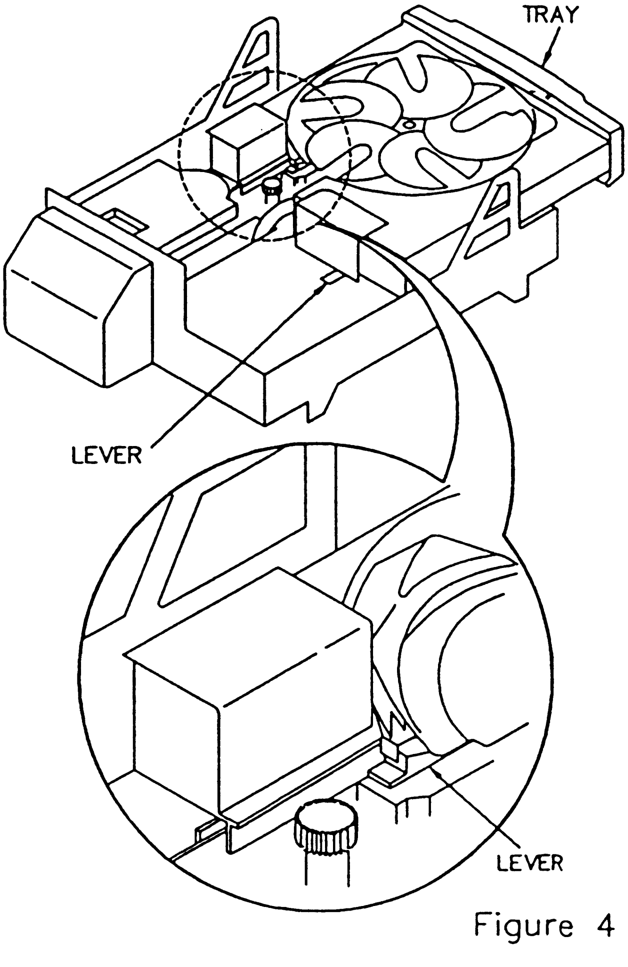


Figure 4

（２）組立て方法

１）LEVER TRAY がfigure 5 の位置で、CD ﾒｶが下がっていることを確認する．

２）TRAY をCHAS MECHAのﾚｰﾙに沿って組み込む。

３）半分までTRAY を組み込んだらFFCを差し、TRAYを最後まで押し入れる。(figure 6)

(2) Reassembling procedure.

1) Confirm that LEVER TRAY is at the most right position in order for the CD Mechanism to be in the down position. (figure 5)

2) Push in the TRAY along the rail of the CHAS MECHA.

3) After TRAY is half closed and FFC is put in, it can enter by force until the end of TRAY closed. (figure 6)

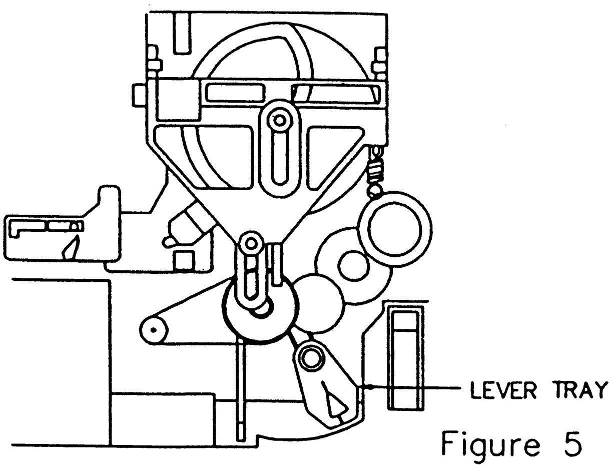


Figure 5

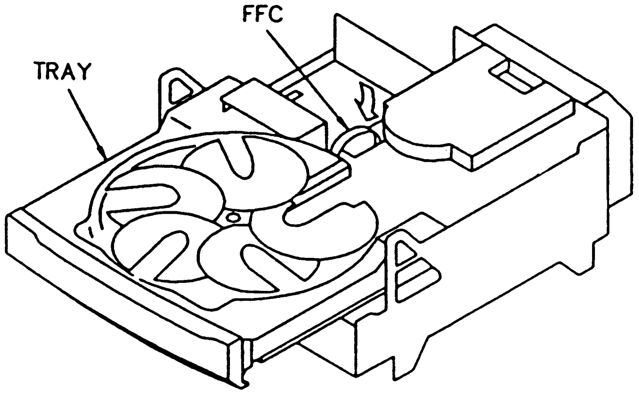


Figure 6

4. ﾀｰﾝﾃｰﾌﾞﾙの組立方法 (figure 7)

１）LEVER TT を"C"の方向に押しながら、TURN TABLE 5CD を組み込む。(figure 7)
この時、TRAY 5CD とTURN TABLE 5CD の切り欠きが同じ方向になるようにする。(figure 8)

＊ 組み込む際のTURN TABLE 5CDのCD番号（１～５）は任意で構いません。(figure 7)

4. How to reassemble the TURN TABLE. (figure 7)

1) Push LEVER TT in the direction of "C", and put in the TURN TABLE 5CD. (figure 7)
After reassembly, one of the TURN TABLE DISC TRAY (can be either one of the five disc trays) must be aligned with TURN TABLE 5CD. (figure 8)
That is, having no gap difference between the TURN TABLE 5CD and the TRAY 5CD.

＊ When reassembling the TURN TABLE 5CD, it is acceptable facing any CD numbe r (1～5).

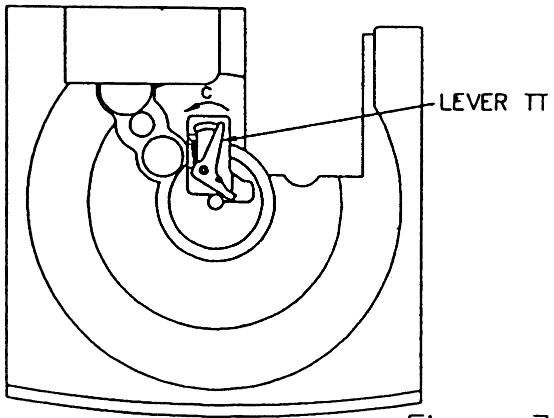


Figure 7

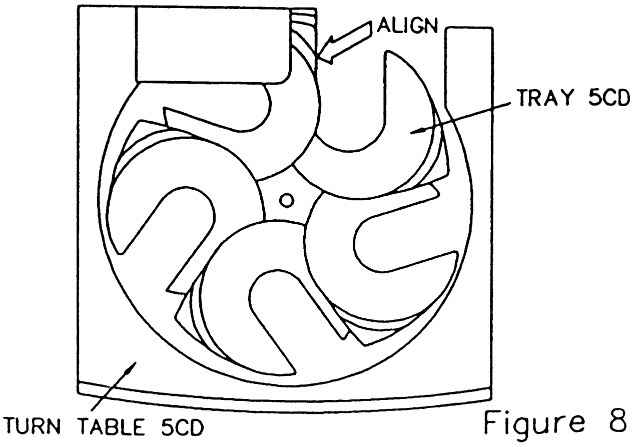


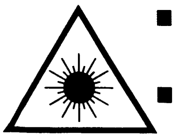
Figure 8

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saataa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

ATTENTION

L'utillisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

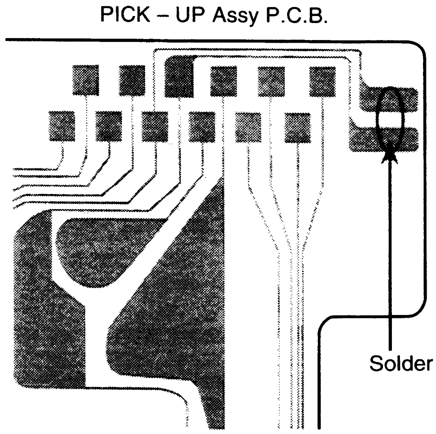
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block

(KSS-213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use the clothes do not touch the diode.

1) After the connection, remove solder shown in figure below.



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	86-MA6-651-010		IC,LC866440 W-5B28
	87-A20-101-019		IC,STK 405-070A
	87-070-453-019		IC,SPS-442-1
	87-017-915-089		IC,BU4094BCF
	87-070-121-010		IC,HA12185NT
	87-017-804-019		IC,BU4052BC
	87-070-202-049		IC,TA2041F
	87-A20-107-019		IC,BA3836
	87-001-607-089		IC,NJM4558M
	87-017-914-019		IC,BU4094 BC
	87-070-127-119		IC,LC72131D
	87-017-714-119		IC,LA1836
	87-A20-069-049		IC,BA3842F
	87-070-294-019		IC,CXD2508AQ
	87-017-745-019		IC,CXA1782BQ
	87-001-982-019		IC,TA7291S
	87-070-305-019		IC,BA6897S
TRANSISTOR			
	87-026-610-089		TR, KTC3198GR
	89-327-125-089		C-TR,2SC2712GR
	89-111-625-089		C-TR,2SA1162GR
	87-026-609-089		TR, KTA1266GR
	89-213-702-019		TR 2SB1370E
	89-332-665-089		TR,2SC3266GR
	87-026-462-089		TR, 2SC1740S (RS)
	87-A30-047-089		TR,CSD655E
	87-026-226-089		C-TR,DTA143EK
	89-406-555-089		TR,2SD655E
	89-502-466-089		TR FET 2SK246-BL (TPE2)
	89-333-317-089		TR,2SC3331T
	89-113-187-889		TR, 2SA 1318 TU
	89-109-521-089		TR,2SA952K
	87-026-210-089		C-TR,DTC144EK T147
	89-333-266-089		C-TR,2SC3326B
	87-026-219-089		TR,DTA144ES
	89-327-143-089		C-TR,2SC2714 (O)
	89-503-602-089		C-FET,2SK360E
	87-026-214-089		TR,DTA114YS
	89-421-722-089		TR,2SD2172 V/W
	87-026-463-089		TR,2SA933S(RS)
	89-110-155-089		TR,2SA1015GR
	89-320-011-089		TR,2SC2001K
	87-026-608-089		C-TR,DTC123JK
	87-026-233-089		C-TR,DTA114TK
	87-026-223-089		C-TR,DTC143TK
	87-026-211-089		C-TR,DTA144EK
	87-026-239-089		C-TR,DTC114TK
	87-026-269-089		TR,DTA114ES
DIODE			
	87-020-027-089		C-DIODE,1SS184
	87-020-125-089		C-DIODE,1SS181
	87-070-274-086		DIODE,1N4003 SEM
	87-017-437-089		DIODE,IN 4148M
	87-A40-116-069		DIODE,RS403L-B-D-51
	87-027-451-089		ZENER,HZ27-2L
	87-017-933-089		ZENER,MTZJ10D
	87-001-731-089		ZENER, HZS6C2L
	87-017-091-089		ZENER,HZS5C1
	87-001-913-089		ZENER UTZJ5.6B
	87-001-912-089		ZENER,UTZJ 5.1B
	87-020-465-089		DIODE,ISS133 T-72
	87-020-339-089		C-DIODE,1SS226
MAIN C.B			

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
BPF831	87-030-105-089		FLTR,BPMB6A
C131	87-010-403-089		CAP,E 3.3-50 SME
C132	87-010-260-089		CAP,E 47-25 SME
C141	87-010-385-089		CAP,E 220-25 SME
C142	87-010-384-089		CAP,E 100-25 SME
C143	87-010-408-089		CAP,E 47-50 SME
C144	87-010-196-089		C-CAP,S 0.1-25 F
C145	87-010-196-089		C-CAP,S 0.1-25 F
C146	87-016-589-099		CAP E, 3300-25 SSL
C151	87-012-368-089		C-CAP S 0.1-50F
C152	87-012-368-089		C-CAP S 0.1-50F
C153	87-016-474-099		CAP,E 3300-50
C154	87-016-474-099		CAP,E 3300-50
C161	87-010-401-089		CAP,E 1-50 SME
C172	87-012-140-089		C-CAP,S 470P-50 CH
C173	87-010-405-089		CAP,E 10-50 SME
C181	87-010-101-089		CAP,E 220-16 SME
C182	87-010-381-089		CAP,E 330-16 SME
C197	87-010-196-089		C-CAP,S 0.1-25 F
C198	87-010-196-089		C-CAP,S 0.1-25 F
C201	87-010-404-089		CAP,E 4.7-50 SME
C202	87-010-404-089		CAP,E 4.7-50 SME
C203	87-010-177-089		C-CAP,S 820P-50 SL
C204	87-010-177-089		C-CAP,S 820P-50 SL
C205	87-010-182-089		C-CAP,S 2200P-50 B
C206	87-010-182-089		C-CAP,S 2200P-50 B
C207	87-010-402-089		CAP,E 2.2-50 SME
C208	87-010-402-089		CAP,E 2.2-50 SME
C209	87-010-405-089		CAP,E 10-50 SME
C210	87-010-405-089		CAP,E 10-50 SME
C211	87-010-318-089		C-CAP,S 47P-50 CH
C212	87-010-318-089		C-CAP,S 47P-50 CH
C213	87-010-147-089		C-CAP,S 3P-50 CH
C214	87-010-147-089		C-CAP,S 3P-50 CH
C215	87-010-196-089		C-CAP,S 0.1-25 F
C216	87-010-196-089		C-CAP,S 0.1-25 F
C217	87-010-196-089		C-CAP,S 0.1-25 F
C218	87-010-196-089		C-CAP,S 0.1-25 F
C219	87-010-198-089		C-CAP,S 0.022-25 B
C220	87-010-198-089		C-CAP,S 0.022-25 B
C221	87-010-194-089		C-CAP,S 0.047-25 F
C261	87-010-197-089		C-CAP,S 0.01-25 B
C262	87-010-197-089		C-CAP,S 0.01-25 B
C263	87-010-197-089		C-CAP,S 0.01-25 B
C264	87-010-197-089		C-CAP,S 0.01-25 B
C301	87-010-197-089		C-CAP,S 0.01-25 B
C311	87-012-155-089		C-CAP,S 180P-50 CH
C312	87-012-155-089		C-CAP,S 180P-50 CH
C313	87-010-180-089		C-CAP,S 1500P-50 B
C314	87-010-180-089		C-CAP,S 1500P-50 B
C315	87-010-318-089		C-CAP,S 47P-50 CH
C316	87-010-318-089		C-CAP,S 47P-50 CH
C321	87-012-145-089		C-CAP S 270P-50CH
C322	87-012-145-089		C-CAP S 270P-50CH
C323	87-012-154-089		C-CAP,S 150P-50 CH
C324	87-012-154-089		C-CAP,S 150P-50 CH
C325	87-010-179-089		C-CAP,S 1200P-50 B
C326	87-010-179-089		C-CAP,S 1200P-50 B
C331	87-010-392-089		CAP,E 33-35 SME
C332	87-010-392-089		CAP,E 33-35 SME
C333	87-010-198-089		C-CAP,S 0.022-25 B
C334	87-010-198-089		C-CAP,S 0.022-25 B
C335	87-010-189-089		C-CAP,S 8200P-50 B
C336	87-010-189-089		C-CAP,S 8200P-50 B
C337	87-010-400-089		CAP,E 0.47-50 SME
C338	87-010-400-089		CAP,E 0.47-50 SME
C339	87-010-371-089		CAP,E 470-6.3 11L
C340	87-010-196-089		C-CAP,S 0.1-25 F
C341	87-010-196-089		C-CAP,S 0.1-25 F
C351	87-010-546-089		CAP,E 0.33-50 SME

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C352	87-010-546-089		CAP,E 0.33-50 SME
C353	87-010-401-089		CAP,E 1-50 SME
C354	87-010-401-089		CAP,E 1-50 SME
C355	87-010-401-089		CAP,E 1-50 SME
C356	87-010-401-089		CAP,E 1-50 SME
C357	87-010-178-089		C-CAP,S 1000P-50 B
C371	87-012-156-089		C-CAP,S 220P-50 CH
C372	87-012-156-089		C-CAP,S 220P-50 CH
C373	87-010-177-089		C-CAP,S 820P-50 SL
C374	87-010-175-089		C-CAP,S 560P-50 SL
C376	87-010-392-089		CAP,E 33-35 SME
C377	87-010-198-089		C-CAP,S 0.022-25 B
C378	87-010-197-089		C-CAP,S 0.01-25 B
C379	87-010-183-089		C-CAP,S 2700P-50 B
C380	87-010-183-089		C-CAP,S 2700P-50 B
C381	87-010-183-089		C-CAP,S 2700P-50 B
C409	87-010-405-089		CAP,E 10-50 SME
C501	87-010-322-089		C-CAP,S 100P-50 CH<K,EZ>
C502	87-010-322-089		C-CAP,S 100P-50 CH<K,EZ>
C521	87-010-181-089		C-CAP,S 1800P-50 B
C522	87-010-181-089		C-CAP,S 1800P-50 B
C523	87-010-178-089		C-CAP,S 1000P-50 B
C524	87-010-178-089		C-CAP,S 1000P-50 B
C527	87-010-186-089		C-CAP,S 4700P-50 B
C528	87-010-186-089		C-CAP,S 4700P-50 B
C529	87-010-400-089		CAP,E 0.47-50 SME
C530	87-010-400-089		CAP,E 0.47-50 SME
C531	87-010-382-089		CAP,E 22-25 SME
C532	87-010-198-089		C-CAP,S 0.022-25 B
C551	87-010-402-089		CAP,E 2.2-50 SME
C552	87-010-402-089		CAP,E 2.2-50 SME
C553	87-010-194-089		C-CAP,S 0.047-25 F
C554	87-010-183-089		C-CAP,S 2700P-50 B
C555	87-010-196-089		C-CAP,S 0.1-25 F
C556	87-010-263-089		CAP,E 100-10 SME 5X11
C557	87-010-992-089		C-CAP,S 0.047-25 B
C558	87-010-545-089		CAP,E 0.22-50 SME
C601	87-010-198-089		C-CAP,S 0.022-25 B
C602	87-010-321-089		C-CAP,S 82P-50 CH
C701	87-010-404-089		CAP,E 4.7-50 SME
C702	87-010-197-089		C-CAP,S 0.01-25 B
C703	87-010-197-089		C-CAP,S 0.01-25 B
C704	87-010-178-089		C-CAP,S 1000P-50 B
C707	87-010-546-089		CAP,E 0.33-50 SME
C708	87-010-546-089		CAP,E 0.33-50 SME
C711	87-010-263-089		CAP,E 100-10 SME 5X11
C712	87-010-112-089		CAP,E 100-16 11L
C722	87-010-152-089		C-CAP,S 8P-50 CH
C723	87-010-178-089		C-CAP,S 1000P-50 B
C725	87-010-178-089		C-CAP,S 1000P-50 B
C727	87-010-196-089		C-CAP,S 0.1-25 F
C728	87-010-248-089		CAP,E 220-10 SME
C729	87-010-197-089		C-CAP,S 0.01-25 B
C770	87-010-197-089		C-CAP,S 0.01-25 B
C771	87-010-405-089		CAP,E 10-50 SME
C772	87-010-194-089		C-CAP,S 0.047-25 F
C773	87-010-196-089		C-CAP,S 0.1-25 F
C774	87-010-263-089		CAP,E 100-10 SME 5X11
C775	87-010-405-089		CAP,E 10-50 SME
C776	87-010-197-089		C-CAP,S 0.01-25 B
C777	87-010-400-089		CAP,E 0.47-50 SME
C778	87-010-401-089		CAP,E 1-50 SME
C779	87-010-401-089		CAP,E 1-50 SME
C780	87-010-197-089		C-CAP,S 0.01-25 B
C785	87-018-134-019		CAP,TC-U 0.01-16 Y
C789	87-012-365-089		C-CAP,S 0.027-25V BK
C790	87-012-365-089		C-CAP,S 0.027-25V BK
C791	87-010-401-089		CAP,E 1-50 SME
C792	87-010-182-019		C-CAP,S 2200P-50 B
C793	87-010-189-089		C-CAP,S 8200P-50 B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C794	87-010-260-089		CAP,E 47-25 SME
C795	87-010-194-089		C-CAP,S 0.047-25 F
C796	87-010-403-089		CAP,E 3.3-50 SME
C797	87-010-197-089		C-CAP,S 0.01-25 B
C799	87-010-405-089		CAP,E 10-50 SME
C801	87-010-197-089		C-CAP,S 0.01-25 B
C802	87-010-312-089		C-CAP,S 15P-50 CH
C803	87-018-134-089		CAP,TC-U 0.01-16 Y
C805	87-010-146-089		C-CAP,S 2P-50 CH
C806	87-010-147-089		C-CAP,S 3P-50 CH
C807	87-010-312-089		C-CAP,S 15P-50 CH
C808	87-010-322-089		C-CAP,S 100P-50 CH
C809	87-010-197-089		C-CAP,S 0.01-25 B
C810	87-010-197-089		C-CAP,S 0.01-25 B
C811	87-010-149-089		C-CAP,S 5P-50 CH
C812	87-010-314-089		C-CAP,S 22P-50 CH
C813	87-010-197-089		C-CAP,S 0.01-25 B
C814	87-010-197-089		C-CAP,S 0.01-25 B
C817	87-010-196-089		C-CAP,S 0.1-25 F
C820	87-010-260-089		CAP,E 47-25 SME
C821	87-010-197-089		C-CAP,S 0.01-25 B
C823	87-010-197-089		C-CAP,S 0.01-25 B
C824	87-018-134-089		CAP,TC-U 0.01-16 Y
C825	87-010-196-089		C-CAP,S 0.1-25 F
C827	87-010-145-089		C-CAP,S 1P-50 CH
C831	87-010-312-089		C-CAP,S 15P-50 CH
C832	87-010-314-089		C-CAP,S 22P-50 CH
C833	87-010-197-089		C-CAP,S 0.01-25 B
C834	87-010-311-089		C-CAP,S 12P-50 CH
C835	87-010-154-089		C-CAP,S 10P-50 CH
C836	87-010-312-089		C-CAP,S 15P-50 CH
C837	87-010-312-089		C-CAP,S 15P-50 CH
C843	87-010-146-089		C-CAP,S 2P-50 CH
C849	87-010-197-089		C-CAP,S 0.01-25 B
C851	87-010-197-089		C-CAP,S 0.01-25 B
C901	87-010-197-089		C-CAP,S 0.01-25 B
C942	87-010-148-089		C-CAP,S 4P-50 CH
C946	87-010-401-089		CAP,E 1-50 SME
C949	87-014-049-089		CAP,PP 470P-100J
C952	87-010-197-089		C-CAP,S 0.01-25 B
C955	87-010-197-089		C-CAP,S 0.01-25 B
C957	87-010-315-089		C-CAP,S 27P-50 CH
C958	87-010-197-089		C-CAP,S 0.01-25 B
C959	87-018-134-089		CAP,TC-U 0.01-16 Y
C960	87-010-196-089		C-CAP,S 0.1-25 F
C988	87-010-198-089		C-CAP,S 0.022-25 B
CF801	87-008-423-089		CF,SFE 10.7MS3G-A
CF802	82-785-747-019		CF,MS2 GHY R
CON321	86-NF7-640-019		CONN ASSY,8P-RPB
D801	87-002-730-089		VARI-CAP,SVC203SPA
D802	87-002-730-089		VARI-CAP,SVC203SPA
D803	87-002-730-089		VARI-CAP,SVC203SPA
D804	87-002-730-089		VARI-CAP,SVC203SPA
IFT806	87-A50-018-019		COIL,FMIFT(4T)COI
J241	87-A60-024-019		JACK 6.3BLK W/S WKM
J261	87-033-227-019		TERMINAL,SP 4P R (Z)
J281	87-099-913-019		JACK,PIN 3P BLK
J501	87-099-741-019		JACK,PIN 2P (JT)
J802	87-033-241-019		TERMINAL,ANT AJ-2039
L261	87-003-383-019		COIL,1UH-S
L262	87-003-383-019		COIL,1UH-S
L351	87-A50-049-019		COIL,TRAP 85K (COI)
L352	87-A50-049-019		COIL,TRAP 85K (COI)
L371	87-007-342-019		COIL,OSC 85K BIAS
L741	87-A50-015-019		COIL,FM DET (TOK)
L742	87-A90-051-019		FLTR,CFAZ-450(TOK)
L770	87-005-849-089		COIL,10UH(CECS)
L790	87-005-564-089		C-COIL,S 2.2UH K
L801	87-006-263-019		COIL,ANTFM 3/4TS,L4

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
L802	87-006-251-019		COIL,ANT FM2-3/4TS,L4
L803	87-006-262-019		COIL,RF FM3-1/2T,L4
L804	87-006-264-019		COIL,RF FM3-1/2TS,L4
L805	87-003-098-089		COIL,2.2UH
L807	87-A50-031-019		COIL,FM OSC (TOK)
L831	87-006-264-019		COIL,RF FM3-1/2TS,L4
L832	87-005-847-089		COIL,2.2UH(CECS)
L941	87-A50-020-019		COIL,ANT LW (COI)
L942	87-A50-019-019		COIL,OSC LW (COI)
L981	86-NF4-665-019		AM PACK 1 (TOK)
PIN301	87-033-220-019		PIN,DIA1 COATING
R191	87-022-050-089		RESIS METAL 1W-0.22J
R192	87-022-050-089		RESIS METAL 1W-0.22J
RY151	87-A90-152-019		RELAY,JW2AHN-B-12V
RY281	87-045-382-019		RELAY,OUAZ-SH-112L
SFR311	87-024-438-089		SFR,220K RH063EC
SFR312	87-024-438-089		SFR,220K RH063EC
SFR321	87-024-438-089		SFR,220K RH063EC
SFR322	87-024-438-089		SFR,220K RH063EC
SFR371	87-024-175-089		SFR,47K DIA6 V
SFR372	87-024-175-089		SFR,47K DIA6 V
SFR722	87-024-171-089		SFR 4.7K DIA
TC721	87-011-253-089		TRIMMER,30P LAR
TC801	87-011-252-089		TRIMMER 10P LAR
TC802	87-011-252-089		TRIMMER 10P LAR
TC803	87-011-252-089		TRIMMER 10P LAR
TC942	87-011-253-089		TRIMMER,30P LAR
W111	84-MA1-683-019		F-CABLE 7P-2.5
W511	88-906-191-119		FF-CABLE,6P 1.25
X703	87-A70-022-019		VIB,CER 456KHZ 3*5A (TDK)
X721	87-030-372-019		VIB,XTAL 7.2MHZ

FRONT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C201	87-010-380-089		CAP,E 47-16 SME
C202	87-010-401-049		CAP,E 1-50 SME
C203	87-010-248-049		CAP,E 220-10 SME
C204	87-010-196-089		C-CAP,S 0.1-25 F
C205	87-010-401-089		CAP,E 1-50 SME
C207	87-010-378-089		CAP,E 10-16 11L
C208	87-010-178-089		C-CAP,S 1000P-50 B
C209	87-010-196-089		C-CAP,S 0.1-25 F
C210	87-010-316-089		C-CAP,S 33P-50 CH
C211	87-010-314-089		C-CAP,S 22P-50 CH
C212	87-010-178-089		C-CAP,S 1000P-50 B
C213	87-010-408-089		CAP,E 47-50 SME
C215	87-010-197-089		C-CAP,S 0.01-25 B
C220	87-010-544-089		CAP,E 0.1-50
C221	87-010-544-089		CAP,E 0.1-50
C271	87-010-197-089		C-CAP,S 0.01-25 B
C301	87-010-198-089		C-CAP,S 0.022-25 B
C302	87-010-198-089		C-CAP,S 0.022-25 B
C401	87-010-196-089		C-CAP,S 0.1-25 F
C501	87-010-198-089		C-CAP,S 0.022-25 B
C502	87-010-198-089		C-CAP,S 0.022-25 B
C540	87-010-384-089		CAP,E 100-25 SME
C553	87-010-184-089		C-CAP,S 3300P-50 B
C554	87-010-184-089		C-CAP,S 3300P-50 B
C555	87-010-180-089		C-CAP,S 1500P-50 B
C556	87-010-112-089		CAP,E 100-16 11L
C557	87-010-404-089		CAP,E 4.7-50 SME
C558	87-010-404-089		CAP,E 4.7-50 SME
C559	87-010-374-089		CAP,E 47-10 11L
C560	87-010-197-089		C-CAP,S 0.01-25 B
C561	87-010-197-089		C-CAP,S 0.01-25 B
C562	87-010-193-089		C-CAP,S 0.033-25 F
C563	87-010-213-089		C-CAP,S 0.015-25 B
C564	87-010-180-089		C-CAP,S 1500P-50 B
C590	87-010-184-089		C-CAP,S 3300P-50 B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C591	87-010-184-089		C-CAP,S 3300P-50 B
C600	87-010-545-089		CAP,E 0.22-50 SME
C601	87-010-321-089		C-CAP,S 82P-50 CH
C602	87-010-544-089		CAP,E 0.1-50
C603	87-010-203-089		C-CAP,S 0.015-25 B
C606	87-010-177-089		C-CAP,S 820P-50 SL
C610	87-010-188-089		C-CAP,S 6800P-50 B
C615	87-010-401-049		CAP,E 1-50 SME
C620	87-010-405-089		CAP,E 10-50 SME
C630	87-010-248-089		CAP,E 220-10 SME
C800	87-010-198-089		C-CAP,S 0.022-25 B
C801	87-010-197-089		C-CAP,S 0.01-25 B
C901	87-010-956-089		C-CAP,S 0.068-25 B
C902	87-010-956-089		C-CAP,S 0.068-25 B
C903	87-010-956-089		C-CAP,S 0.068-25 B
C904	87-010-956-089		C-CAP,S 0.068-25 B
C905	87-010-196-089		C-CAP,S 0.1-25 F
C906	87-010-260-049		CAP,E 47-25 SME
C907	87-010-182-089		C-CAP,S 2200P-50 B
C908	87-010-182-089		C-CAP,S 2200P-50 B
C909	87-010-545-049		CAP E 0.22-50 SME
C910	87-010-545-049		CAP E 0.22-50 SME
C913	87-010-260-049		CAP,E 47-25 SME
C914	87-010-405-049		CAP,E 10-50 SME
C915	87-010-405-049		CAP,E 10-50 SME
C918	87-010-196-089		C-CAP,S 0.1-25 F
C951	87-010-401-089		CAP,E 1-50 SME
C952	87-010-401-089		CAP,E 1-50 SME
CN503	85-MA7-611-019		CONN ASSY,10P MECHA
FL101	86-MA5-602-010		FL,6MA5
J600	87-099-659-019		JACK,6.3 JY-6314-01130
J601	87-099-659-019		JACK,6.3 JY-6314-01130
L201	87-A50-109-019		COIL,CLOCK 6.0MHZ
LED351	87-A40-167-089		LED,HLMK-D200#2CC R
LED352	87-A40-167-089		LED,HLMK-D200#2CC R
LED353	87-A40-167-089		LED,HLMK-D200#2CC R
LED354	87-A40-167-089		LED,HLMK-D200#2CC R
LED355	87-A40-167-089		LED,HLMK-D200#2CC R
R545	87-029-129-099		RES,FUSE 3.3-1/4W
SFR540	87-024-169-089		SFR, 2.2K DIA6 V
SW309	87-036-397-089		SW,TACT SKQNAB
SW310	87-036-397-089		SW,TACT SKQNAB
SW311	87-036-397-089		SW,TACT SKQNAB
SW312	87-036-397-089		SW,TACT SKQNAB
SW313	87-036-397-089		SW,TACT SKQNAB
SW314	87-036-397-089		SW,TACT SKQNAB
SW315	87-036-397-089		SW,TACT SKQNAB
SW316	87-036-397-089		SW,TACT SKQNAB
SW317	87-036-397-089		SW,TACT SKQNAB
SW318	87-036-397-089		SW,TACT SKQNAB
SW319	87-036-397-089		SW,TACT SKQNAB
SW320	87-036-397-089		SW,TACT SKQNAB
SW321	87-036-397-089		SW,TACT SKQNAB
SW322	87-036-397-089		SW,TACT SKQNAB
SW323	87-036-397-089		SW,TACT SKQNAB
SW324	87-036-397-089		SW,TACT SKQNAB
SW325	87-036-397-089		SW,TACT SKQNAB
SW326	87-036-397-089		SW,TACT SKQNAB
SW327	87-036-397-089		SW,TACT SKQNAB
SW328	87-036-397-089		SW,TACT SKQNAB
SW329	87-036-397-089		SW,TACT SKQNAB
SW330	87-036-397-089		SW,TACT SKQNAB
VR601	86-MA5-604-019		VR ,10KA
VR801	85-MA5-653-019		VR,50KBX2
VR850	83-MA1-661-019		VR,SL 10KB
W502	88-914-231-119		FF-CABLE,14P 1.25

CD KEY C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
SW301	87-036-397-089		SW,TACT SKQNAB
SW302	87-036-397-089		SW,TACT SKQNAB
SW303	87-036-397-089		SW,TACT SKQNAB
SW304	87-036-397-089		SW,TACT SKQNAB
SW305	87-036-397-089		SW,TACT SKQNAB
SW306	87-036-397-089		SW,TACT SKQNAB
SW307	87-036-397-089		SW,TACT SKQNAB
W504	86-MA6-671-019		F-CABLE,2P

AC C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C101	87-010-197-089		C-CAP,S 0.01-25 B<EZ,K>
R111	87-022-184-089		RESIS METAL 1W-0.33J
R112	87-022-184-089		RESIS METAL 1W-0.33J

PT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠F101	87-035-222-019		FUSE,T 1A (218)<EZ,K>
⚠F101	87-035-361-019		FUSE,T800mA 250V<G>
⚠FC101	87-033-147-019		CLAMP FUSE
⚠FC102	87-033-147-019		CLAMP FUSE
⚠PT101	86-MA6-643-019		PT,6MA6 EZ <EZ,K>
⚠PT101	86-MA6-642-119		PT,6MA6 H<G>
⚠TE001	82-304-743-019		TERMINAL,1P
⚠TE002	82-304-743-019		TERMINAL,1P

CD MAIN C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
	86-ZG1-605-019		CABLE,FFC 16P
	86-ZG1-608-019		CABLE,FFC 8P
C11	87-010-182-089		C-CAP,S 2200P-50 B
C12	87-016-081-089		C-CAP,S 0.1-16 RK
C13	87-016-081-089		C-CAP,S 0.1-16 RK
C14	87-016-081-089		C-CAP,S 0.1-16 RK
C15	87-010-404-049		CAP,E 4.7-50 SME
C16	87-016-081-089		C-CAP,S 0.1-16 RK
C17	87-010-197-089		C-CAP,S 0.01-25 B
C18	87-010-402-049		CAP,E 2.2-50 SME
C19	87-010-382-049		CAP,E 22-25 SME
C20	87-010-213-089		C-CAP,S 0.015-25 B
C21	87-010-197-089		C-CAP,S 0.01-25 B
C22	87-010-263-049		CAP,E 100-10 SME
C23	87-010-197-089		C-CAP,S 0.01-25 B
C24	87-016-369-089		C-CAP,S 0.033-25 B K
C25	87-010-197-089		C-CAP,S 0.01-25 B
C26	87-016-369-089		C-CAP,S 0.033-25 B K
C27	87-010-197-089		C-CAP,S 0.01-25 B
C29	87-010-154-089		C-CAP,S 10P-50 D CH
C30	87-010-263-049		CAP,E 100-10 SME
C31	87-010-178-089		C-CAP,S 1000P-50 B
C32	87-010-198-089		C-CAP,S 0.022-25 B
C33	87-016-081-089		C-CAP,S 0.1-16 RK
C34	87-010-197-089		C-CAP,S 0.01-25 B
C35	87-010-263-049		CAP,E 100-10 SME
C36	87-015-677-049		CAP,E 100-6.3 7L
C37	87-010-197-089		C-CAP,S 0.01-25 B
C38	87-010-260-089		CAP,E 47-25 SME
C39	87-010-196-089		C-CAP,S 0.1-25 F
C91	87-010-263-049		CAP,E 100-10 SME
C101	87-010-596-089		C-CAP,S 0.047-16 RK
C102	87-010-188-089		C-CAP,S 6800P-50 B
C103	87-018-132-089		CAP,TC-U 2200P-16 X
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-010-404-049		CAP,E 4.7-50 SME
C106	87-010-263-049		CAP,E 100-10 SME
C107	87-010-197-089		C-CAP,S 0.01-25 B
C108	87-016-526-089		C-CAP,S 0.47-16 BK
C109	87-010-197-089		C-CAP,S 0.01-25 B
C112	87-010-318-089		C-CAP,S 47P-50 CH

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C113	87-010-263-089		CAP,E 100-10 SME 5X11
C114	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-318-089		C-CAP,S 47P-50 CH
C116	87-010-318-089		C-CAP,S 47P-50 CH
C117	87-010-197-089		C-CAP,S 0.01-25 B
C122	87-010-186-089		C-CAP,S 4700P-50 B
C123	87-010-382-049		CAP,E 22-25 SME
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-403-049		CAP,E 3.3-50 SME
C212	87-010-403-089		CAP,E 3.3-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-016-251-049		CAP,E 220-16 SMG
C232	87-010-263-089		CAP,E 100-10 SME 5X11
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C401	87-010-403-089		CAP,E 3.3-50 SME
C402	87-010-403-049		CAP,E 3.3-50 SME
C501	87-016-459-049		CAP,E 470-10 SMG
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-049		CAP,E 100-10 SME
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-016-459-049		CAP,E 470-10 SMG
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-196-089		C-CAP,S 0.1-25 F
C602	87-016-251-049		CAP,E 220-16 SMG
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-318-089		C-CAP,S 47P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C705	87-010-178-089		C-CAP,S 1000P-50 B
C901	87-010-260-049		CAP,E 47-25 SME
C902	87-010-196-089		C-CAP,S 0.1-25 F
L11	87-003-102-089		COIL,10UH K LAL02
LED901	87-A40-123-019		LED,SLZ-8128A-01-B
M601	87-045-305-019		MOTOR,RF-500TB
R36	87-022-365-089		C-RES,S 100K-1/10W F
R37	87-022-363-089		C-RES,S 68K-1/10W F
R38	87-022-363-089		C-RES,S 68K-1/10W F
R39	87-022-363-089		C-RES,S 68K-1/10W F
R40	87-022-363-089		C-RES,S 68K-1/10W F
R41	87-022-365-089		C-RES,S 100K-1/10W F
SFR11	87-024-175-089		SFR,47K DIA6V
SFR12	87-024-176-089		SFR,100K DIA6V
SFR13	87-024-176-089		SFR,100K DIA6V
SW601	87-036-109-019		SW,PUSH SPPB 61
SW602	87-036-109-019		SW,PUSH SPPB 61
SW603	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344MHZ

LED C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-733-080		LED,SEL1250SM

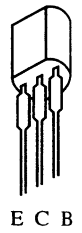
T-T C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-089		CAP,TC U 0.1-50
LED411	87-070-288-019		LED,GL380
M401	87-A90-036-019		MOT ASSY,RF-300CA-11
PS401	87-A90-156-019		SNSR,SG-240
Q411	87-A30-031-019		P-TR,PT380F
SW401	87-036-109-019		SW,PUSH SPPB61

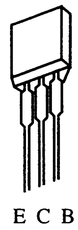
CD MOTOR C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
SW1	87-036-340-019		SW,LEAF LSA-1121
M20	87-045-358-019		MOT,RF-310TA 43
M21	87-045-356-019		MOT,RF-310TA 30

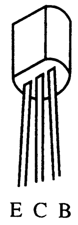
TRANSISTOR ILLUSTRATION



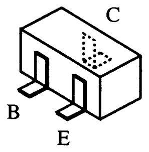
2SC3266GR
KTA1266GR
KTC3198GR
2SD2172V/W



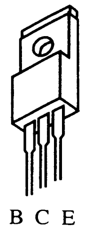
DTA114YS
DTA144ES
2SC1740S(RS)
2SA933S(RS)
DTA114ES



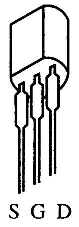
2SA952K
2SD655E
CSD655E
2SA1015GR
2SC2001K



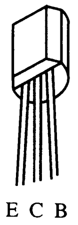
2SA1162GR
2SC2712GR
2SC2714
2SC3326B
DTC144EK
DTA143EK
DTC123JK
DTA114TK
DTC143TK
DTA144EK
DTC114TK



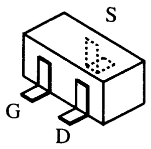
2SB1370E



2SK246-BL



2SA1318TU
2SC3331T



2SK360

Oチップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

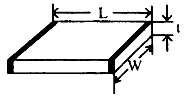
8 8 - □□□ □□□

A
抵抗部品コード
Resistor Code

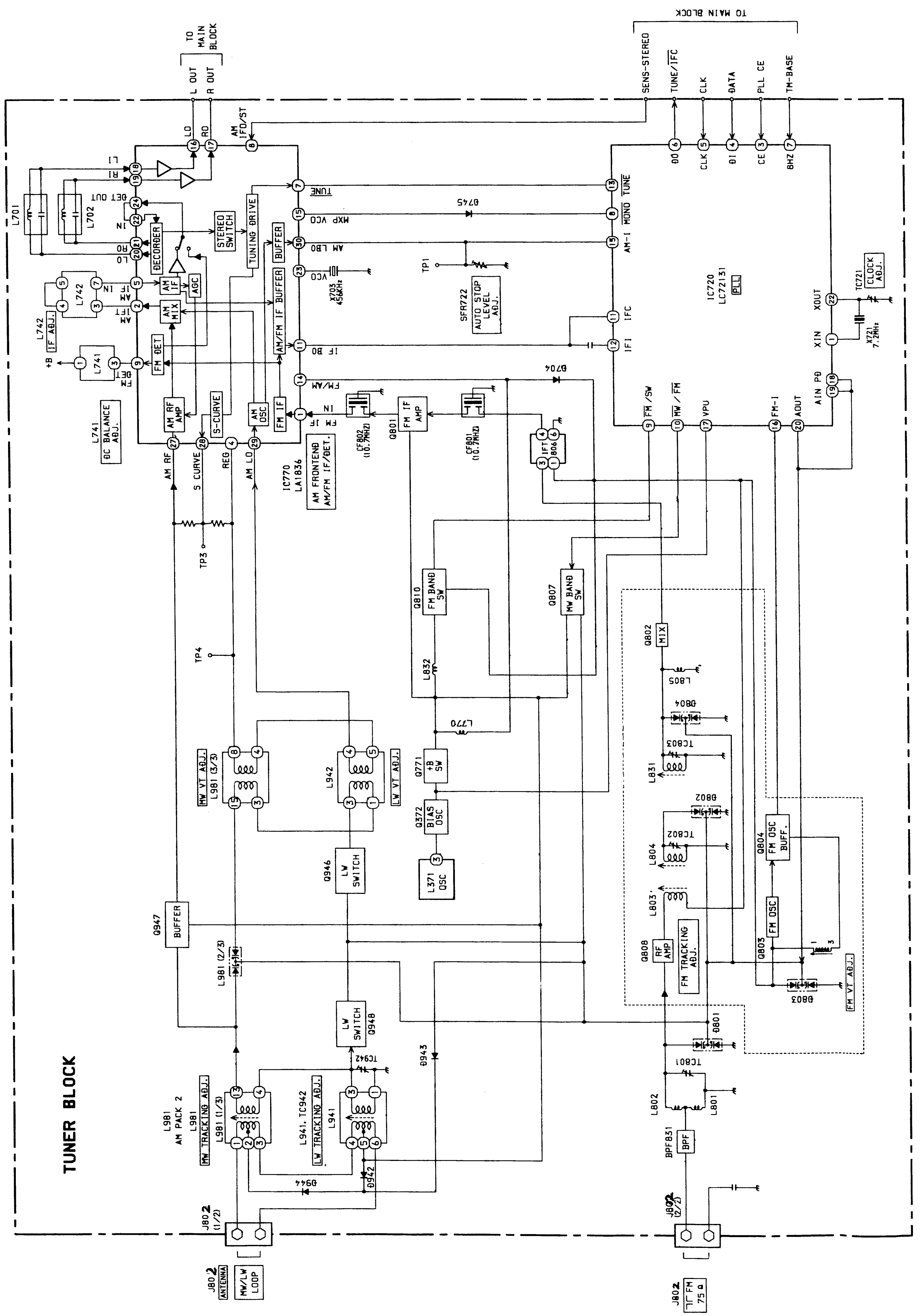
桁表示
Figure

抵抗値
Value of resistor

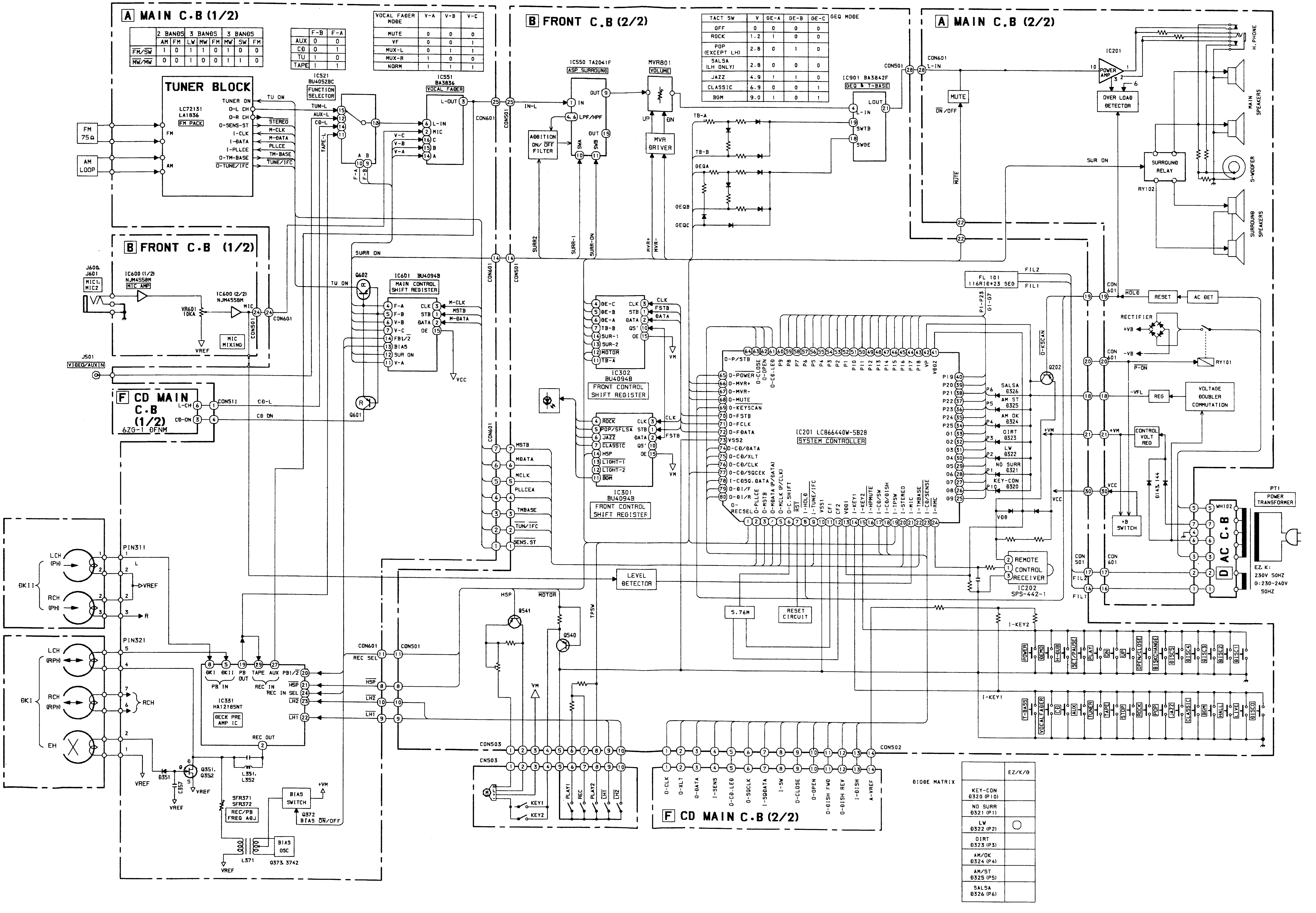
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形／Form	L	W	t	
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

BLOCK DIAGRAM – 1 (TUNER)


TO MAIN BLOCK
L OUT
R OUT
SENS-STEREO
TUNE/IFC
CLK
DATA
PLL CE
TM-BASE
TUNER BLOCK
IC770 LA1836 AM FRONTEND AM/FM IF/DET.
IC720 LC72131 PLL
DECORDER
STEREO SWITCH
TUNING DRIVE
BUFFER
AGC
AM MIX
AM IF
FM DET
AM RF AMP
S-CURVE
AM OSC
FM IF
AM/FM IF BUFFER
CF801
CF802
Q801 FM IF AMP
L701
L702
L741 DC BALANCE ADJ.
L742 IF ADJ.
SFR722 AUTO STOP LEVEL ADJ.
TC721 CLOCK ADJ.
X721 7.2MHz
X703 456KHz
Q810 FM BAND SW
Q807 MW BAND SW
Q802 MIX
Q804 FM OSC BUFF.
Q803 FM OSC
Q808 RF AMP
FM TRACKING ADJ.
FM VT ADJ.
Q771 +B SW
Q372 BIAS OSC
L371 OSC
Q946 LW SWITCH
Q948 LW SWITCH
Q947 BUFFER
L981 MW VT ADJ.
L942 LW VT ADJ.
L981 AM PACK 2 MW TRACKING ADJ.
L941, TC942 LW TRACKING ADJ.
BPF831 BPF
J802 ANTENNA MW/LW LOOP
J802 FM 75 Ω
TP1
TP3
TP4

BLOCK DIAGRAM – 2 (MAIN/FRONT)


A MAIN C.B (1/2)
TUNER BLOCK
LC72131
LA1836
FM PACK
TUNER ON
O-L CH
O-R CH
O-SENS-ST
I-CLK
I-DATA
I-PLLCE
O-TM-BASE
O-TUNE/IFC
TU ON
STEREO
M-CLK
M-DATA
PLLCE
TM-BASE
TUNE/IFC
FM 75Ω
AM LOOP
IC521 BU4052BC FUNCTION SELECTOR
TUN-L
AUX-L
CD-L
TAPE-L
IC551 BA3836 VOCAL FADER
L-OUT
L-IN
MIC
V-C
V-B
V-A
CON601
CON501
B FRONT C.B (1/2)
J600 J601 MIC1, MIC2
IC600 (1/2) NJM4558M MIC AMP
IC600 (2/2) NJM4558M
VR601 10KA
MIC MIXING
VREF
J501 VIDEO/AUXIN
SURR ON
Q602
IC601 BU4094B MAIN CONTROL SHIFT REGISTER
F-A
F-B
FB1/2
BIAS
SUR ON
CLK
STB
DATA
OE
VCC
Q601
F CD MAIN C.B (1/2)
6ZG-1 DFNM
L-CH
CD-ON
CON511
CD-L
CD ON
MSTB
MDATA
MCLK
PLLCEA
TMBASE
TUN/IFC
SENS.ST
DKII
DKI
LCH (PH)
RCH (PH)
LCH (RPH)
RCH (RPH)
EH
PIN311
PIN321
VREF
IC331 HA12185NT DECK PRE AMP IC
PB IN
PB OUT
TAPE
AUX
REC IN
REC SEL
REC OUT
HSP
LH2
LH1
Q351, Q352
L351, L352
C357
D351
SFR371 SFR372 REC/PB FREQ ADJ
BIAS SWITCH
Q372 BIAS ON/OFF
BIAS OSC
Q373 3742
L371
B FRONT C.B (2/2)
IC550 TA2041F ASP SURROUND
IN-L
LPF/HPF
SWA
SWB
ADDITION ON/OFF FILTER
SURR2
SURR-1
SURR-ON
MVR801 VOLUME
UP
DN
MVR DRIVER
MVR+
MVR-
IC901 BA3842F GEQ & T-BASE
LOUT
SWTB
SWGE
TB-A
TB-B
GEQA
GEQB
GEQC
IC302 BU4094B FRONT CONTROL SHIFT REGISTER
GE-C
GE-B
GE-A
TB-B
SUR-1
SUR-2
MOTOR
TB-A
FSTB
VM
IC301 BU4094B FRONT CONTROL SHIFT REGISTER
ROCK
POP/SFLSA
JAZZ
CLASSIC
HSP
LIGHT-1
LIGHT-2
BGM
IC201 LC866440W-5B28 SYSTEM CONTROLLER
LEVEL DETECTOR
5.76M
RESET CIRCUIT
Q541
Q540
MOTOR
TPSW
CON503
CN503
KEY1
KEY2
PLAY1
REC
PLAY2
LH1
LH2
F CD MAIN C.B (2/2)
CON502
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH REV
I-DISH
A-VREF
DIODE MATRIX
A MAIN C.B (2/2)
CON601
L-IN
MUTE
ON/OFF
IC201
POWER AMP
OVER LOAD DETECTOR
H.PHONE
MAIN SPEAKERS
SUR ON
SURROUND RELAY
RY102
S-WOOFER
SURROUND SPEAKERS
FL 101 11GR10*23 SEG
FIL2
FIL1
P1-P23
G1-G7
RESET
AC DET
RECTIFIER
+VB
-VB
RY101
P-ON
-VFL
REG
VOLTAGE DOUBLER COMMUTATION
CONTROL VOLT REG
+VM
VCC
+B SWITCH
Q202
O-KSCAN
SALSA D326
AM ST D325
AM OK D324
DIRT D323
LW D322
NO SURR D321
KEY-CON D320
VDD
REMOTE CONTROL RECEIVER
IC202 SPS-442-1
D AC C.B
WH102
PT1 POWER TRANSFORMER
EZ, K: 230V 50HZ
G:230-240V 50HZ
I-KEY1
I-KEY2
POWER
DEMO
P-DUB
SET/PAUSE
PLAY
ON
UP
OPEN/CLOSE
DISCHANGE
DISC5
DISC4
DISC3
DISC2
DISC1
T-BASS
VOCALFADER
CD
AUX
TUNER
TAPE
STOP
ROCK
POP
JAZZ
CLASSIC
BGM
HALL
LIVE
DISCO

	2 BANDS		3 BANDS			3 BANDS		
	AM	FM	LW	MW	FM	MW	SW	FM
FM/SW	1	0	1	1	0	1	0	0
MW/MW	0	0	1	0	0	1	1	0

	F-B	F-A
AUX	0	0
CD	0	1
TU	1	0
TAPE	1	1

VOCAL FADER MODE	V-A	V-B	V-C
MUTE	0	0	0
VF	0	0	1
MUX-L	0	1	1
MUX-R	1	0	0
NORM	1	1	1

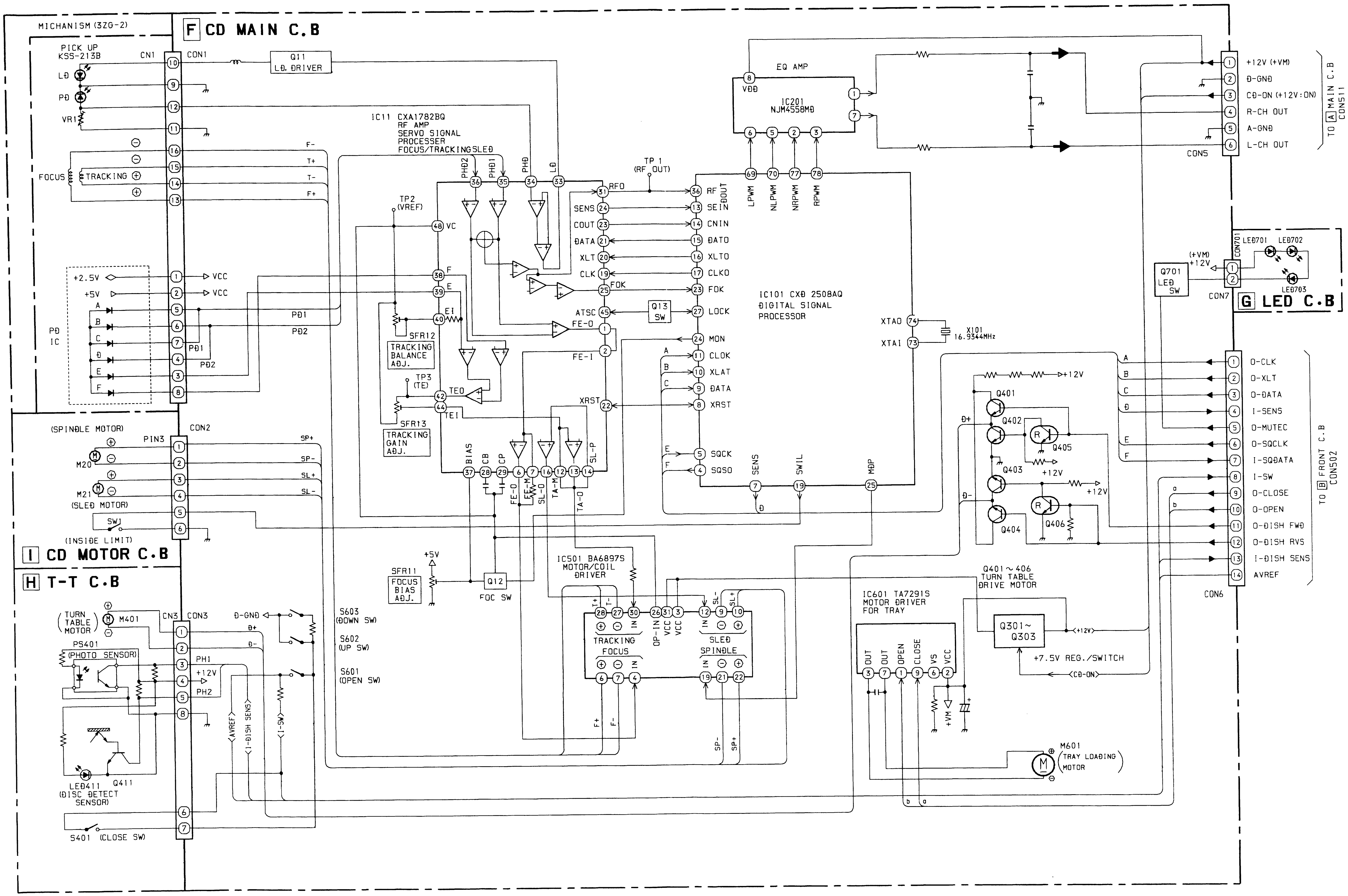
GEQ MODE

TACT SW	V	GE-A	GE-B	GE-C
OFF	0	0	0	0
ROCK	1.2	1	0	0
POP (EXCEPT LH)	2.8	0	1	0
SALSA (LH ONLY)	2.8	0	0	0
JAZZ	4.9	1	1	0
CLASSIC	6.9	0	0	1
BGM	9.0	1	0	1

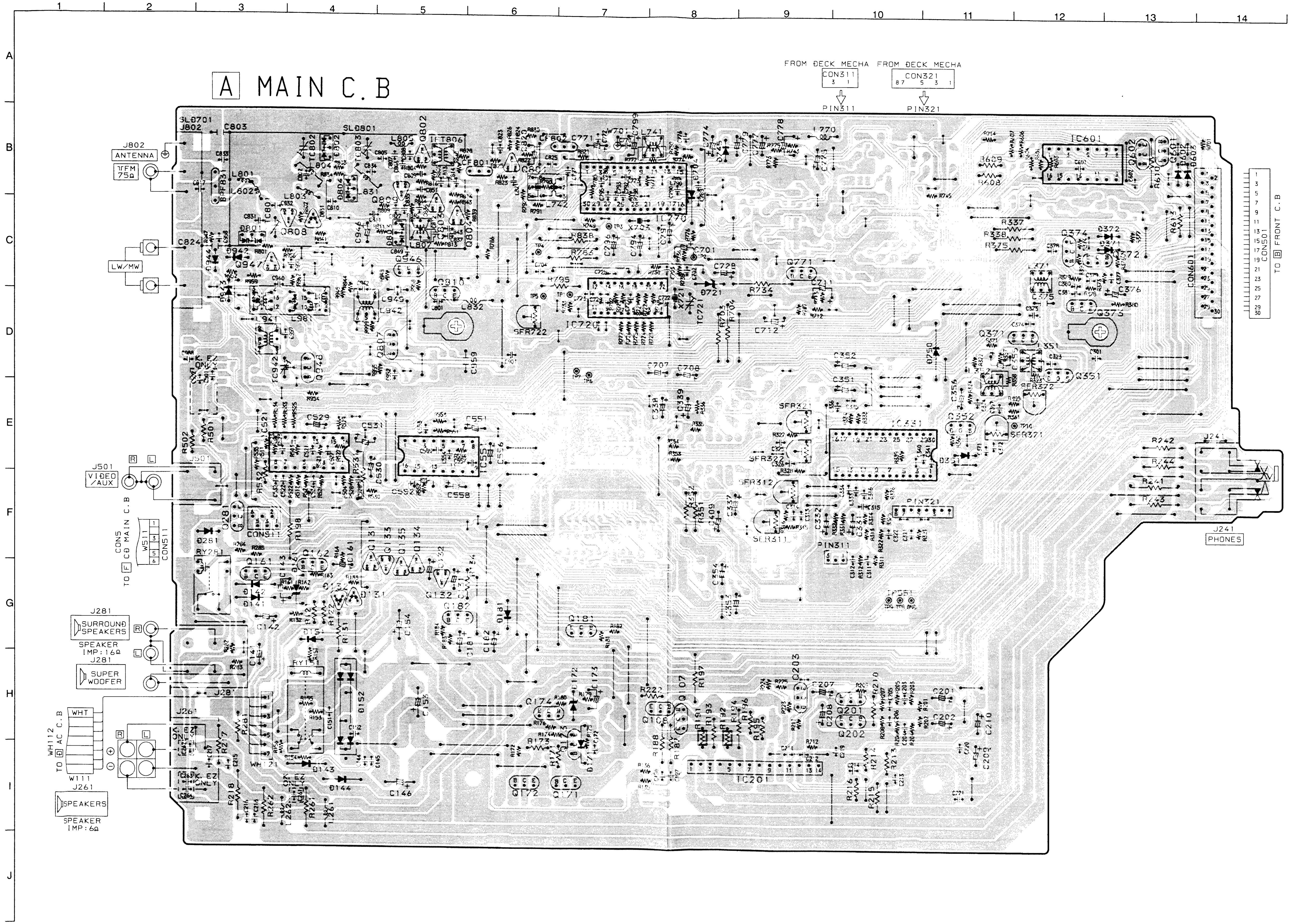
DIODE MATRIX

	EZ/K/G
KEY-CON D320 (P10)	
NO SURR D321 (P1)	
LW D322 (P2)	○
DIRT D323 (P3)	
AM/OK D324 (P4)	
AM/ST D325 (P5)	
SALSA D326 (P6)	

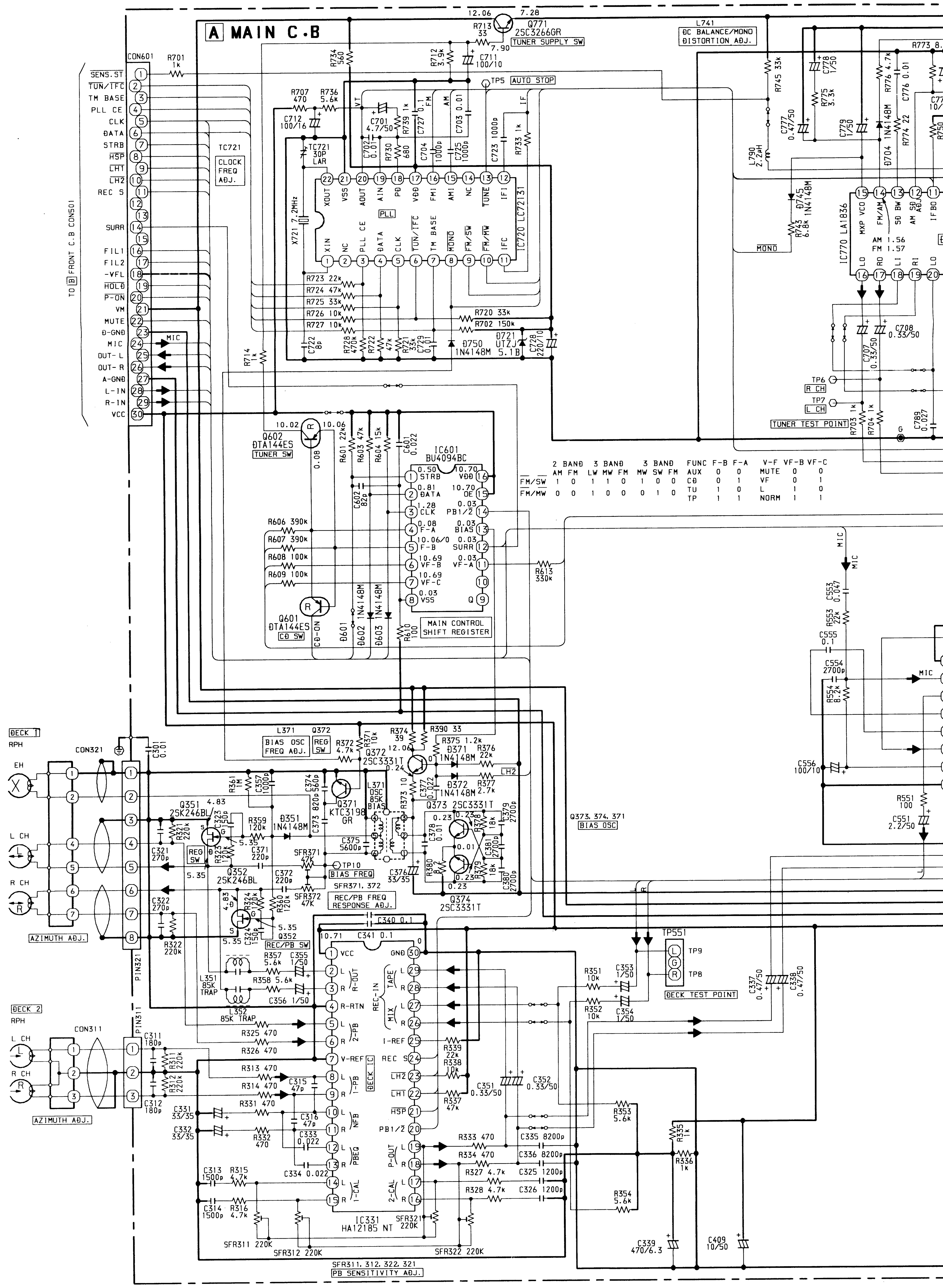
BLOCK DIAGRAM – 3 (CD)

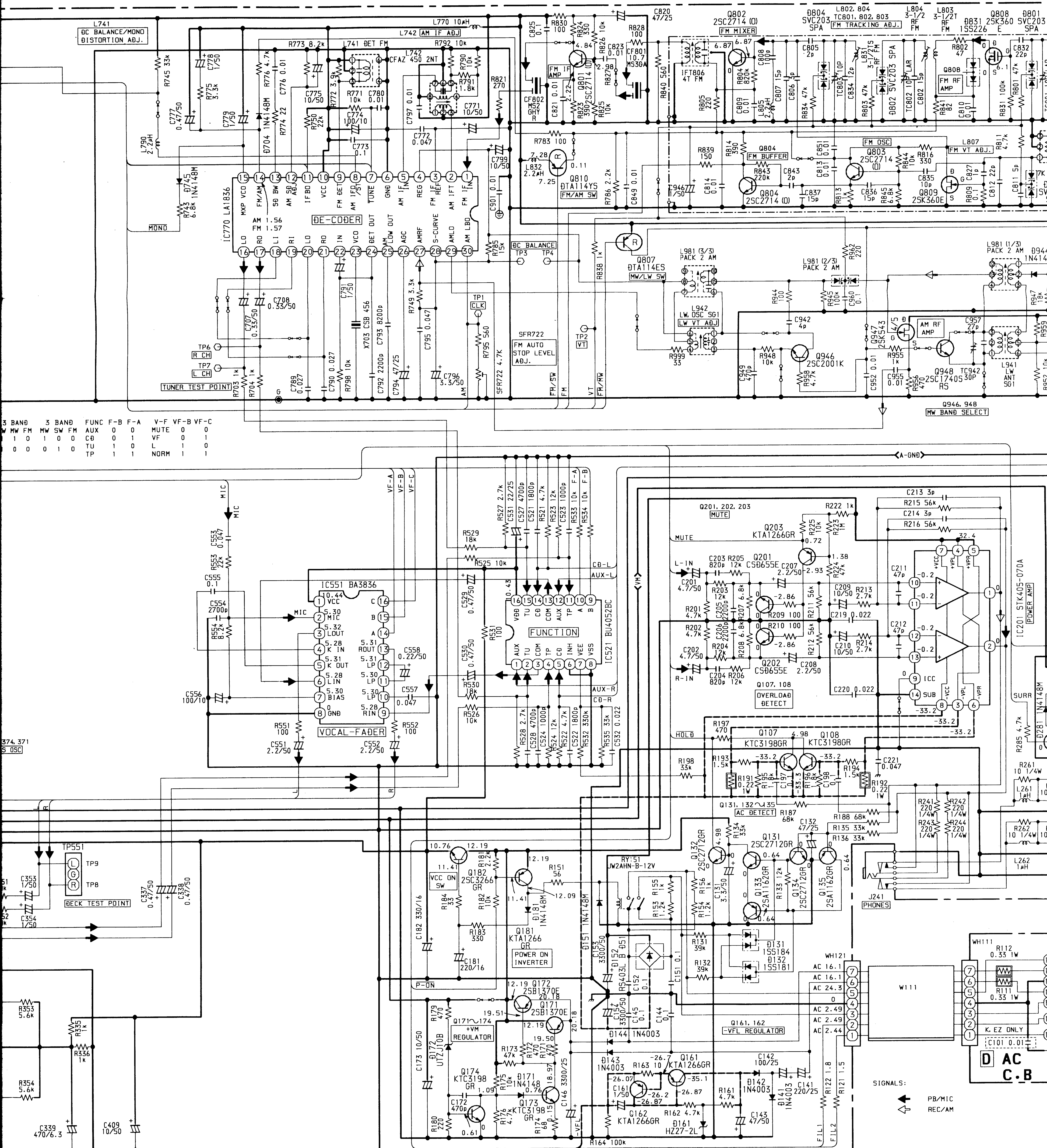

MICHANISM (3ZG-2)
F CD MAIN C.B
PICK UP KSS-213B
CN1
CON1
LD
PD
VR1
Q11 LD. DRIVER
FOCUS
TRACKING
F-
T+
T-
F+
IC11 CXA1782BQ RF AMP SERVO SIGNAL PROCESSER FOCUS/TRACKING SLED
PHD2
PHD1
PHD
LD
TP 1 (RF OUT)
TP2 (VREF)
VC
RFO
SENS
COUT
DATA
XLT
CLK
FOK
ATSC
FE-O
FE-I
XRST
Q13 SW
+2.5V
+5V
VCC
PD IC
PD1
PD2
SFR12 TRACKING BALANCE ADJ.
TP3 (TE)
TEO
TEI
SFR13 TRACKING GAIN ADJ.
EI
BIAS
CB
CP
FE-O
FE-M
SL-O
TA-M
TA-O
SL-P
(SPINDLE MOTOR)
PIN3
CON2
M20
M21
(SLED MOTOR)
SW1
(INSIDE LIMIT)
SP+
SP-
SL+
SL-
I CD MOTOR C.B
H T-T C.B
SFR11 FOCUS BIAS ADJ.
+5V
Q12
FOC SW
IC501 BA6897S MOTOR/COIL DRIVER
TRACKING
FOCUS
OP-IN
VCC
SLED
SPINDLE
IN
T+
T-
SL-
SL+
F+
F-
SP-
SP+
TURN TABLE MOTOR
M401
CN3
CON3
PS401 (PHOTO SENSOR)
PH1
PH2
+12V
D-GND
D+
D-
S603 (DOWN SW)
S602 (UP SW)
S601 (OPEN SW)
<AVREF>
<I-DISH SENS>
<I-SW>
LED411
Q411
(DISC DETECT SENSOR)
S401 (CLOSE SW)
EQ AMP
VDD
IC201 NJM4558MD
LPWM
NLPWM
NRPWM
RPWM
DOUT
RF
SEIN
CNIN
DATO
XLTO
CLKO
FOK
LOCK
MON
CLOK
XLAT
DATA
XRST
SQCK
SQSO
SENS
SWIL
MDP
IC101 CXD 2508AQ DIGITAL SIGNAL PROCESSOR
XTAO
XTAI
X101 16.9344MHz
CON5
+12V (+VM)
D-GND
CD-ON (+12V:ON)
R-CH OUT
A-GND
L-CH OUT
TO A MAIN C.B CON511
CON701
LED701
LED702
LED703
(+VM) +12V
Q701 LED SW
CON7
G LED C.B
Q401
Q402
Q403
Q404
Q405
Q406
+12V
D+
D-
Q401～406 TURN TABLE DRIVE MOTOR
IC601 TA7291S MOTOR DRIVER FOR TRAY
OUT
OPEN
CLOSE
VS
VCC
+VM
Q301～ Q303
<+12V>
+7.5V REG./SWITCH
<CD-ON>
M601
(TRAY LOADING MOTOR)
CON6
O-CLK
O-XLT
O-DATA
I-SENS
O-MUTEC
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
AVREF
TO B FRONT C.B CON502

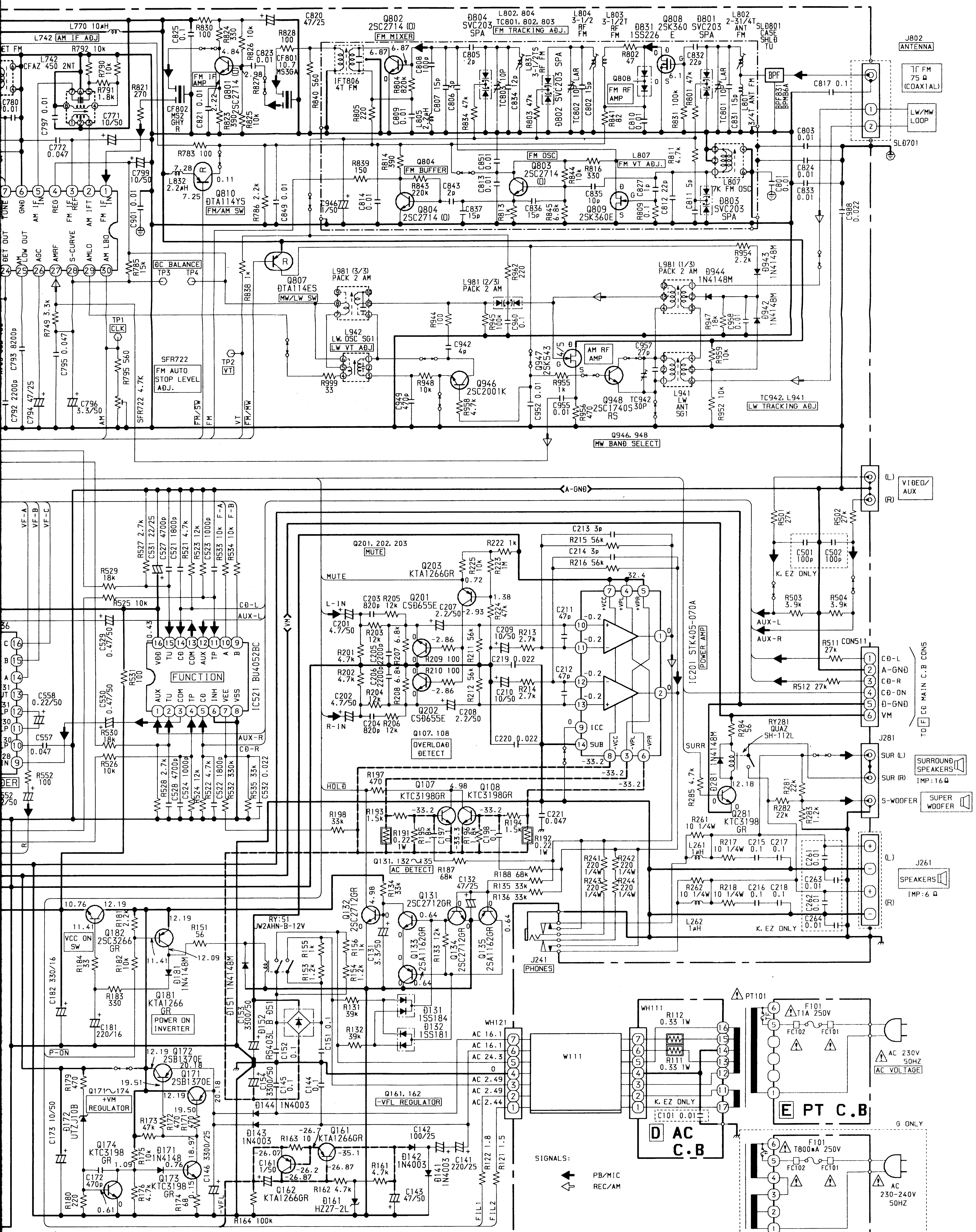
WIRING – 1 (MAIN)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
FROM DECK MECHA
CON311
3 1
PIN311
FROM DECK MECHA
CON321
8 7 5 3 1
PIN321
J802
ANTENNA
FM 75Ω
LW/MW
J501
R
L
VIDEO /AUX
TO F CD MAIN C.B
CON5
W511
CON511
J281
SURROUND SPEAKERS
SPEAKER IMP:16Ω
J281
SUPER WOOFER
TO G AC C.B
WH112
WHT
W111
J261
SPEAKERS
SPEAKER IMP:6Ω
J241
PHONES
TO B FRONT C.B
CON501
CON601
IC601
IC331
IC201
IC720
IC770

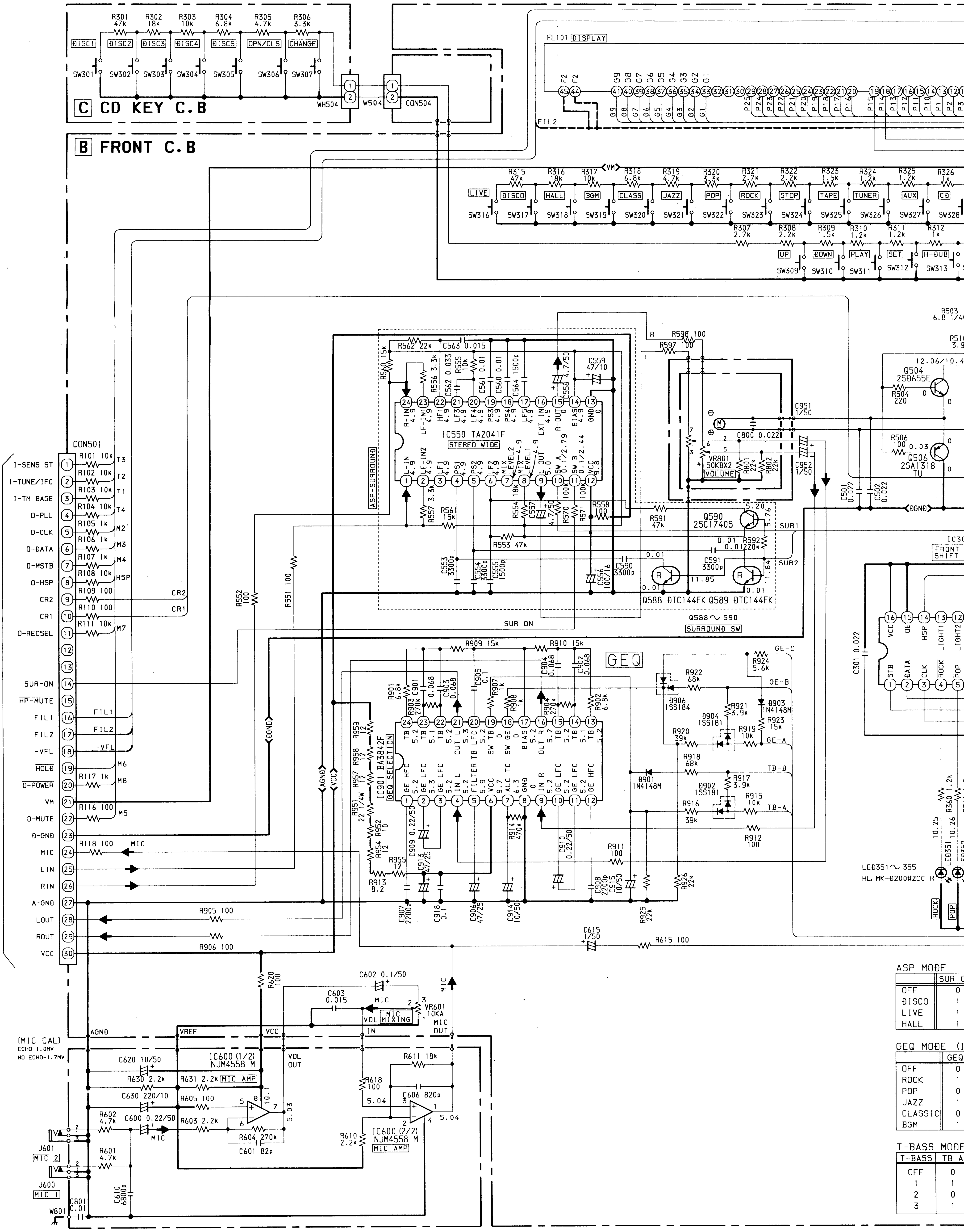
SCHEMATIC DIAGRAM – 1 (MAIN)

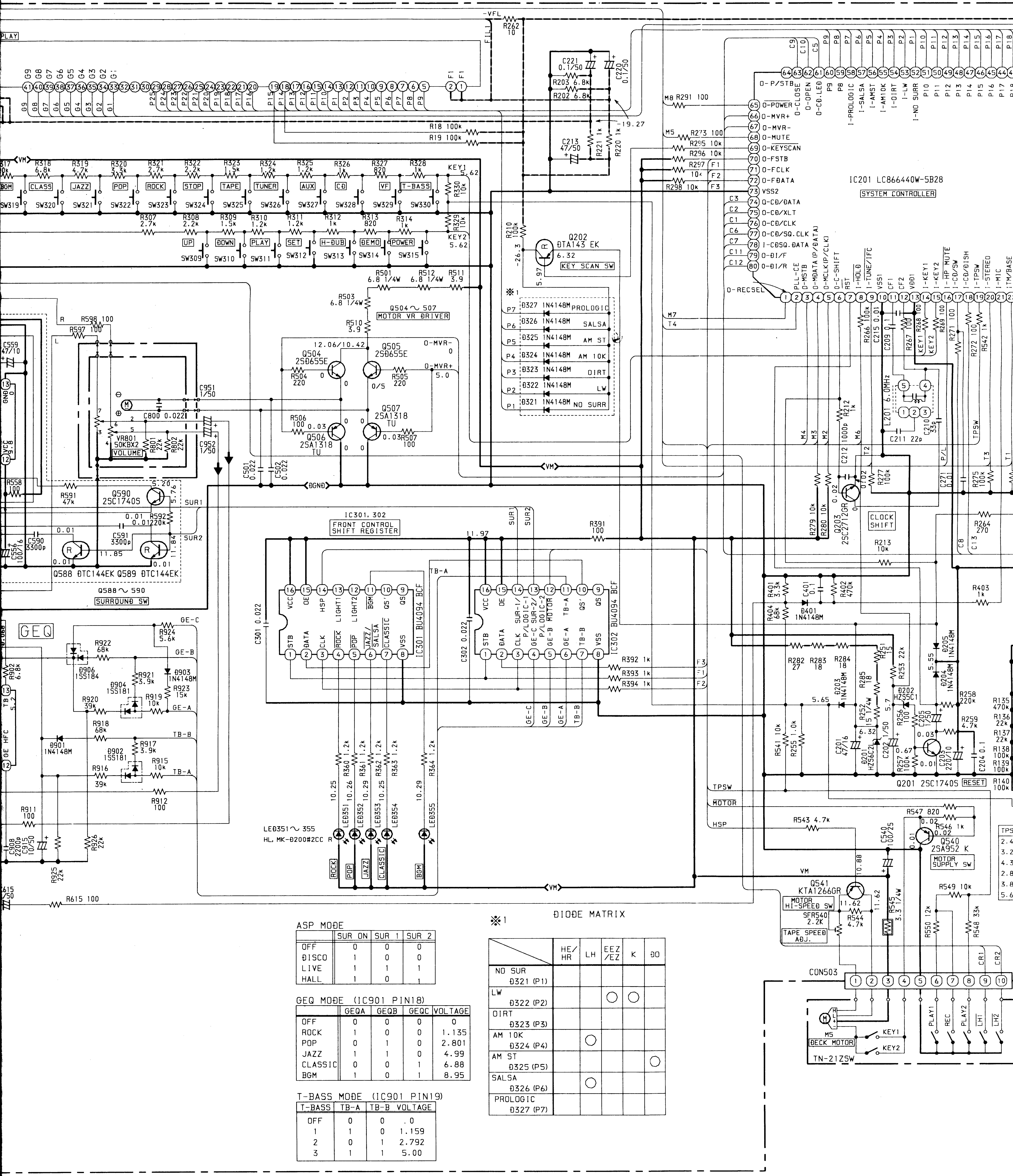

A MAIN C.B
CON601
TO B FRONT C.B CON501
SENS.ST
TUN/TFC
TM BASE
PLL CE
CLK
DATA
STRB
HSP
LH1
LH2
REC S
SURR
FIL1
FIL2
-VFL
HOLD
P-ON
VM
MUTE
D-GND
MIC
OUT-L
OUT-R
A-GND
L-IN
R-IN
VCC
Q771 2SC3266GR
TUNER SUPPLY SW
TP5 AUTO STOP
TC721 CLOCK FREQ ADJ.
X721 7.2MHz
PLL
IC720 LC72131
L741 DC BALANCE/MONO DISTORTION ADJ.
IC770 LA1836
MONO
TP6 R CH
TP7 L CH
TUNER TEST POINT
Q602 DTA144ES
TUNER SW
IC601 BU4094BC
MAIN CONTROL SHIFT REGISTER
Q601 DTA144ES
CD SW
2 BAND AM FM | 3 BAND LW MW FM | 3 BAND MW SW FM | FUNC F-B F-A | V-F VF-B VF-C
FM/SW 1 0 | 1 1 0 | 1 0 0 | AUX 0 0 | MUTE 0 0
FM/MW 0 0 | 1 0 0 | 0 1 0 | CD 0 1 | VF 0 1
TU 1 0 | L 1 0
TP 1 1 | NORM 1 1
DECK 1
RPH
CON321
EH
L CH
R CH
AZIMUTH ADJ.
PIN321
DECK 2
CON311
PIN311
L371 BIAS OSC FREQ ADJ.
Q372 REG SW
Q371 KTC3198 GR
Q373 2SC3331T
Q374 2SC3331T
Q373, 374, 371 BIAS OSC
Q351 2SK246BL
Q352 2SK246BL
REC/PB SW
TP10 BIAS FREQ
SFR371, 372 REC/PB FREQ RESPONSE ADJ.
L351 85K TRAP
L352 85K TRAP
IC331 HA12185 NT
DECK IC
TP551
TP9
TP8
DECK TEST POINT
SFR311, 312, 322, 321 PB SENSITIVITY ADJ.
MIC


L741 DC BALANCE/MONO DISTORTION ADJ.
L770 10µH
L742 AM IF ADJ
L741 DET FM
L742 CFAZ 450 2NT
IC770 LA1836
DE-CODER
AM 1.56
FM 1.57
MONO
Q810 DTA114YS FM/AM SW
Q801 2SC2714 (O) FM IF AMP
CF802 M52 GHY
CF801 10.7 MS3GA
Q802 2SC2714 (O) FM MIXER
IFT806 4T FM
D804 SVC203 SPA
L802, 804 TC801, 802, 803 FM TRACKING ADJ.
L804 3-1/2 RF FM
L803 3-1/2T RF FM
D831 1SS226
Q808 2SK360 E
D801 SVC203 SPA
Q808 FM RF AMP
Q804 FM BUFFER
Q804 2SC2714 (O)
Q803 2SC2714 (O) FM OSC
L807 FM VT ADJ.
Q809 2SK360E
DC BALANCE TP3 TP4
Q807 DTA114ES MW/LW SW
L981 (3/3) PACK 2 AM
L981 (2/3) PACK 2 AM
L981 (1/3) PACK 2 AM
L942 LW OSC SG1 LW VT ADJ
Q946 2SC2001K
Q947 2SK543
AM RF AMP
Q948 2SC1740S RS
L941 LW ANT SG1
Q946, 948 MW BAND SELECT
TP1 CLK
SFR722 FM AUTO STOP LEVEL ADJ.
TP2 VT
TP6 R CH
TP7 L CH
TUNER TEST POINT
3 BAND W MW FM 1 0 1 0 0 0 1 0
3 BAND MW SW FM 0 0 1 0 0 1 0
FUNC F-B F-A AUX 0 0 CD 0 1 TU 1 0 TP 1 1
V-F VF-B VF-C MUTE 0 0 VF 0 1 L 1 0 NORM 1 1
MIC
IC551 BA3836
VOCAL-FADER
IC521 BU4052BC
FUNCTION
CD-L AUX-L AUX-R CD-R
VF-A VF-B VF-C
F-A F-B
A-GND
Q201, 202, 203 MUTE
Q203 KTA1266GR
Q201 CS0655E
Q202 CS0655E
L-IN R-IN
IC201 STK405-070A POWER AMP
Q107, 108 OVERLOAD DETECT
Q107 KTC3198GR
Q108 KTC3198GR
HOLD
Q131, 132~135 AC DETECT
Q131 2SC2712GR
Q132 2SC2712GR
Q133 2SA1162GR
Q134 2SC2712GR
Q135 2SA1162GR
RY51 JW2AHN-B-12V
D131 1SS184
D132 1SS181
J241 PHONES
SURR
TP551
TP9 TP8
DECK TEST POINT
Q182 2SC3266 GR
VCC ON SW
Q181 KTA1266 GR
POWER ON INVERTER
D181 1N4148M
D151 1N4148M
D152 RS403L
P-ON
Q172 2SB1370E
Q171 2SB1370E
Q171~174 +VM REGULATOR
D172 UTZJ10B
Q174 KTC3198 GR
Q173 KTC3198 GR
D171 1N4148
D144 1N4003
D143 1N4003
Q161, 162 -VFL REGULATOR
Q161 KTA1266GR
Q162 KTA1266GR
D161 HZ27-2L
D142 1N4003
D141 1N4003
WH121
AC 16.1 AC 16.1 AC 24.3 0 AC 2.49 AC 2.49 AC 2.44
W111
WH111
R112 0.33 1W
R111 0.33 1W
K. EZ ONLY
C101 0.01
D AC C.B
SIGNALS:
PB/MIC
REC/AM
374, 371 S OSC
FIL1 FIL2
VM
VFL


L770 10μH
L742 AM IF ADJ
R792 10k
CFAZ 450 2NT
Q801 2SC2714 (O)
FM IF AMP
CF801 10.7 MS3GA
CF802 MS2 GHY R
C820 47/25
Q802 2SC2714 (O)
FM MIXER
Ð804 SVC203 SPA
L802, 804 TC801, 802, 803
FM TRACKING ADJ.
L804 3-1/2 RF FM
L803 3-1/2T RF FM
Ð831 1SS226
Q808 2SK360 E
Ð801 SVC203 SPA
L802 2-31/4T ANT FM
SLÐ801 CASE SHLÐ TU
J802 ANTENNA
FM 75 Ω (COAXIAL)
LW/MW LOOP
BPF
BPF831 BPM86A
C817 0.1
SLÐ701
Q808 FM RF AMP
IFT806 4T FM
Q804 FM BUFFER
Q804 2SC2714 (O)
FM OSC
Q803 2SC2714 (O)
L807 FM VT ADJ.
Q809 2SK360E
Ð803 SVC203 SPA
Q810 ÐTA114YS
FM/AM SW
ÐC BALANCE
TP3 TP4
Q807 ÐTA114ES
MW/LW SW
L981 (3/3) PACK 2 AM
L981 (2/3) PACK 2 AM
L981 (1/3) PACK 2 AM
Ð944 1N4148M
Ð943 1N4148M
Ð942 1N4148M
L942 LW OSC SG1
LW VT ADJ
Q946 2SC2001K
Q947 2SK543
AM RF AMP
Q948 2SC1740S RS
TC942 30P
L941 LW ANT SG1
TC942, L941 LW TRACKING ADJ
Q946, 948 MW BAND SELECT
TP1 CLK
TP2 VT
SFR722 FM AUTO STOP LEVEL ADJ.
TUNE GND REG FM IF REF AM IFT FM IF
DET OUT AM LOW OUT AGC AMRF S-CURVE AMLO AM LBO
A-GNÐ
VF-A VF-B VF-C
CÐ-L AUX-L AUX-R CÐ-R
FUNCTION
IC521 BU4052BC
VÐÐ TU CÐ COM AUX TP A B
AUX TU COM TP CÐ INH VEE VSS
Q201, 202, 203 MUTE
Q203 KTA1266GR
MUTE
L-IN R-IN
Q201 CS0655E
Q202 CS0655E
Q107, 108 OVERLOAD DETECT
IC201 STK405-070A POWER AMP
+VCC +VPL +VPR ICC SUB VCC VPL VPR
HOLÐ
Q107 KTC3198GR
Q108 KTC3198GR
Q131, 132~135 AC DETECT
Q131 2SC2712GR
Q132 2SC2712GR
Q133 2SA1162GR
Q134 2SC2712GR
Q135 2SA1162GR
Ð131 1SS184
Ð132 1SS181
J241 PHONES
VIDEO/AUX (L) (R)
K. EZ ONLY
CON511
CÐ-L A-GNÐ CÐ-R CÐ-ON Ð-GNÐ VM
TO F CÐ MAIN C.B CON5
RY281 QUAZ SH-112L
SURR
Q281 KTC3198 GR
Ð281 1N4148M
J281
SUR (L) SUR (R) S-WOOFER
SURROUND SPEAKERS IMP:16Ω
SUPER WOOFER
J261 SPEAKERS IMP:6 Ω
L261 1μH L262 1μH
VCC ON SW
Q182 2SC3266 GR
Q181 KTA1266 GR
POWER ON INVERTER
Ð181 1N4148M
RY151 JW2AHN-B-12V
Ð151 1N4148M
Ð152 ~ Ð151 RS403L
P-ON
Q172 2SB1370E
Q171 2SB1370E
Q171~174 +VM REGULATOR
Ð172 UTZJ10B
Q174 KTC3198 GR
Ð171 1N4148
Q173 KTC3198 GR
Ð144 1N4003
Ð143 1N4003
Q161 KTA1266GR
Q162 KTA1266GR
Ð161 HZ27-2L
Ð142 1N4003
Ð141 1N4003
Q161, 162 -VFL REGULATOR
FIL1 FIL2 VFL
WH121
AC 16.1 AC 16.1 AC 24.3 0 AC 2.49 AC 2.49 AC 2.44
W111
WH111
R112 0.33 1W
R111 0.33 1W
K. EZ ONLY
C101 0.01
D AC C.B
PT101
F101 T1A 250V
FC102 FC101
AC 230V 50HZ
AC VOLTAGE
E PT C.B
G ONLY
F101 T800mA 250V
AC 230-240V 50HZ
E PT C.B
SIGNALS:
PB/MIC
REC/AM

SCHEMATIC DIAGRAM – 2 (FRONT)


C CD KEY C.B
DISC1
DISC2
DISC3
DISC4
DISC5
OPN/CLS
CHANGE
SW301
SW302
SW303
SW304
SW305
SW306
SW307
R301 47k
R302 18k
R303 10k
R304 6.8k
R305 4.7k
R306 3.3k
WH504
W504
CON504
B FRONT C.B
FL101 DISPLAY
FIL2
LIVE
DISCO
HALL
BGM
CLASS
JAZZ
POP
ROCK
STOP
TAPE
TUNER
AUX
CD
UP
DOWN
PLAY
SET
H-DUB
CON501
I-SENS ST
I-TUNE/IFC
I-TM BASE
O-PLL
O-CLK
O-DATA
O-MSTB
O-HSP
CR2
CR1
O-RECSEL
SUR-ON
HP-MUTE
FIL1
FIL2
-VFL
HOLD
O-POWER
VM
O-MUTE
D-GND
MIC
LIN
RIN
A-GND
LOUT
ROUT
VCC
FROM A MAIN C.B CON601
IC550 TA2041F
STEREO WIDE
ASP-SURROUND
Q588 DTC144EK
Q589 DTC144EK
Q590 2SC1740S
Q588 ~ 590
SURROUND SW
SUR ON
VR801 50KBX2
VOLUME
Q504 2SD655E
Q506 2SA1318
IC901 BA3842F
GEQ SELECTION
GEQ
D906 1SS184
D904 1SS181
D903 1N4148M
D901 1N4148M
D902 1SS181
IC600 (1/2) NJM4558 M
MIC AMP
IC600 (2/2) NJM4558 M
MIC AMP
VR601 10KA
MIC MIXING
(MIC CAL)
ECHO-1.0MV
NO ECHO-1.7MV
J601
MIC 2
J600
MIC 1
W801
FRONT SHIFT
LED351 ~ 355
HL. MK-D200#2CC
ROCK
POP
ASP MODE
OFF
DISCO
LIVE
HALL
GEQ MODE
OFF
ROCK
POP
JAZZ
CLASSIC
BGM
T-BASS MODE
T-BASS
TB-A
OFF
1
2
3


IC201 LC866440W-5B28
SYSTEM CONTROLLER
IC301, 302
FRONT CONTROL SHIFT REGISTER
IC301 BU4094 BCF
IC302 BU4094 BCF
Q202 ĐTA143 EK
KEY SCAN SW
Q504～507
MOTOR VR DRIVER
Q504 2SĐ655E
Q505 2SĐ655E
Q506 2SA1318 TU
Q507 2SA1318 TU
Q588～590
SURROUNĐ SW
Q588 ĐTC144EK
Q589 ĐTC144EK
Q590 2SC1740S
Q203 2SC2712GR
CLOCK SHIFT
Q201 2SC1740S
RESET
Q540 2SA952 K
MOTOR SUPPLY SW
Q541 KTA1266GR
MOTOR HI-SPEEĐ SW
SFR540 2.2K
TAPE SPEEĐ AĐJ.
VR801 50KBX2
VOLUME
GEQ
LEĐ351～355
HL. MK-Đ200#2CC R
ROCK
POP
JAZZ
CLASSIC
BGM
CON503
M5
ĐECK MOTOR
TN-21ZSW
KEY1
KEY2
PLAY1
REC
PLAY2
LH1
LH2
CLASS
JAZZ
POP
ROCK
STOP
TAPE
TUNER
AUX
CĐ
VF
T-BASS
UP
ĐOWN
PLAY
SET
H-ĐUB
ĐEMO
POWER
L201 6.0MHz
ĐGNĐ
VM
※1

※1

ĐIOĐE MATRIX

	HE/HR	LH	EEZ/EZ	K	ĐO
NO SUR Đ321 (P1)					
LW Đ322 (P2)			○	○	
OIRT Đ323 (P3)					
AM 10K Đ324 (P4)		○			
AM ST Đ325 (P5)					○
SALSA Đ326 (P6)		○			
PROLOGIC Đ327 (P7)					

ASP MOĐE

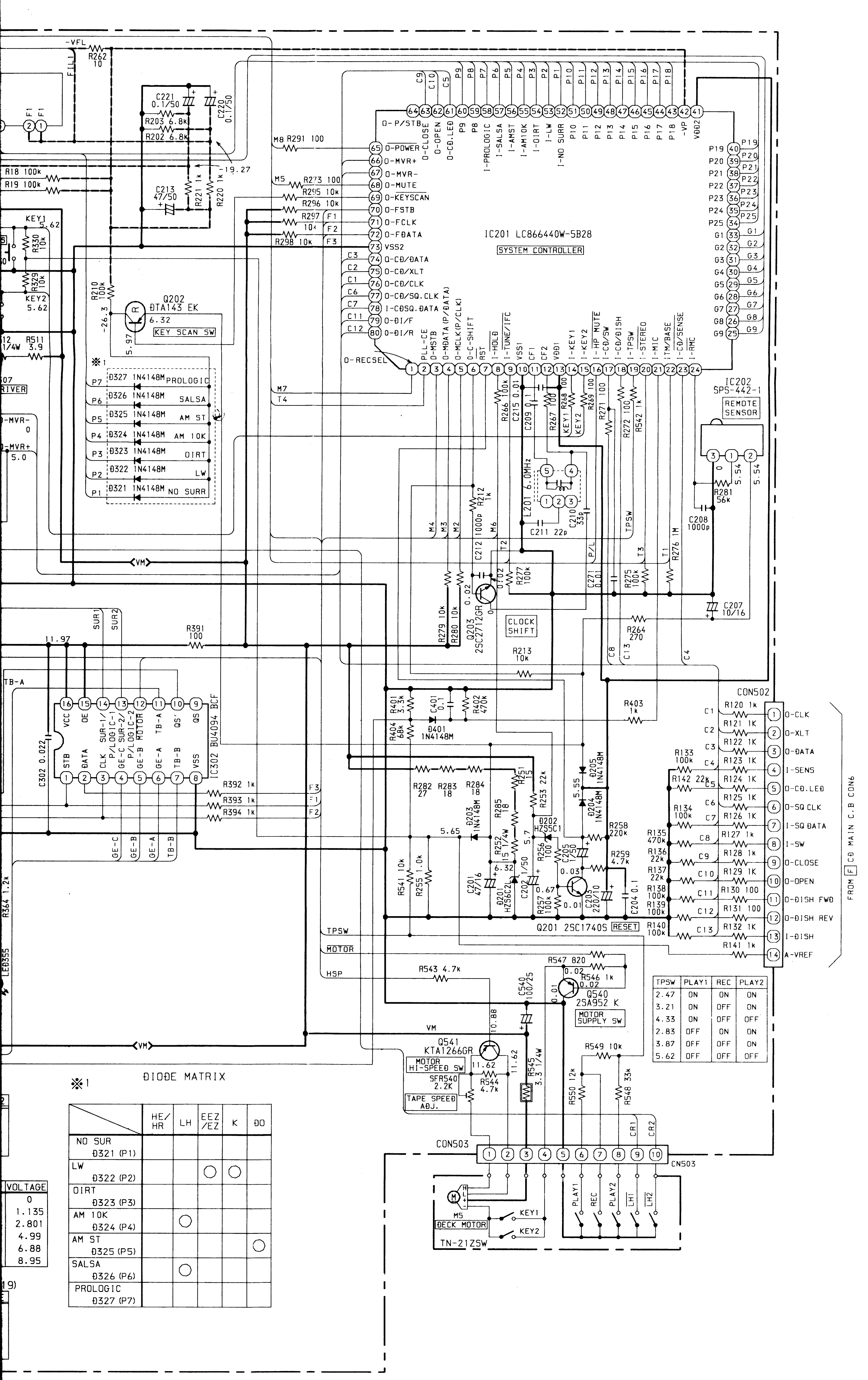
	SUR ON	SUR 1	SUR 2
OFF	0	0	0
ĐISCO	1	0	0
LIVE	1	1	1
HALL	1	0	1

GEQ MOĐE (IC901 PIN18)

	GEQA	GEQB	GEQC	VOLTAGE
OFF	0	0	0	0
ROCK	1	0	0	1.135
POP	0	1	0	2.801
JAZZ	1	1	0	4.99
CLASSIC	0	0	1	6.88
BGM	1	0	1	8.95

T-BASS MOĐE (IC901 PIN19)

T-BASS	TB-A	TB-B	VOLTAGE
OFF	0	0	.0
1	1	0	1.159
2	0	1	2.792
3	1	1	5.00



IC201 LC866440W-5B28
SYSTEM CONTROLLER
IC202
SPS-442-1
REMOTE SENSOR
Q202
DTA143 EK
KEY SCAN SW
Q203
2SC2712GR
CLOCK SHIFT
Q201 2SC1740S
RESET
IC302 BU4094 BCF
Q540
2SA952 K
MOTOR SUPPLY SW
Q541
KTA1266GR
MOTOR HI-SPEED SW
SFR540
2.2K
TAPE SPEED ADJ.
CON502
CON503
CN503
M5
DECK MOTOR
TN-21ZSW
KEY1
KEY2
PLAY1
REC
PLAY2
LH1
LH2
CR1
CR2
L201 6.0MHz
D321 1N4148M NO SURR
D322 1N4148M LW
D323 1N4148M OIRT
D324 1N4148M AM 10K
D325 1N4148M AM ST
D326 1N4148M SALSA
D327 1N4148M PROLOGIC
D401 1N4148M
D202 HZ5SC1
D203 1N4148M
D204 1N4148M
D205 1N4148M
D201 HZ5.6C2
0-CLK
0-XLT
0-DATA
I-SENS
0-CD.LED
0-SQ CLK
I-SQ DATA
I-SW
0-CLOSE
0-OPEN
0-DISH FWD
0-DISH REV
I-DISH
A-VREF
FROM F CD MAIN C.B CON6
TPSW
MOTOR
HSP
VM
-VFL
11.97
5.62
19.27
-26.3
6.32
5.97
5.65
5.55
5.7
6.32
0.67
0.03
0.01
0.02
10.88
11.62
5.54

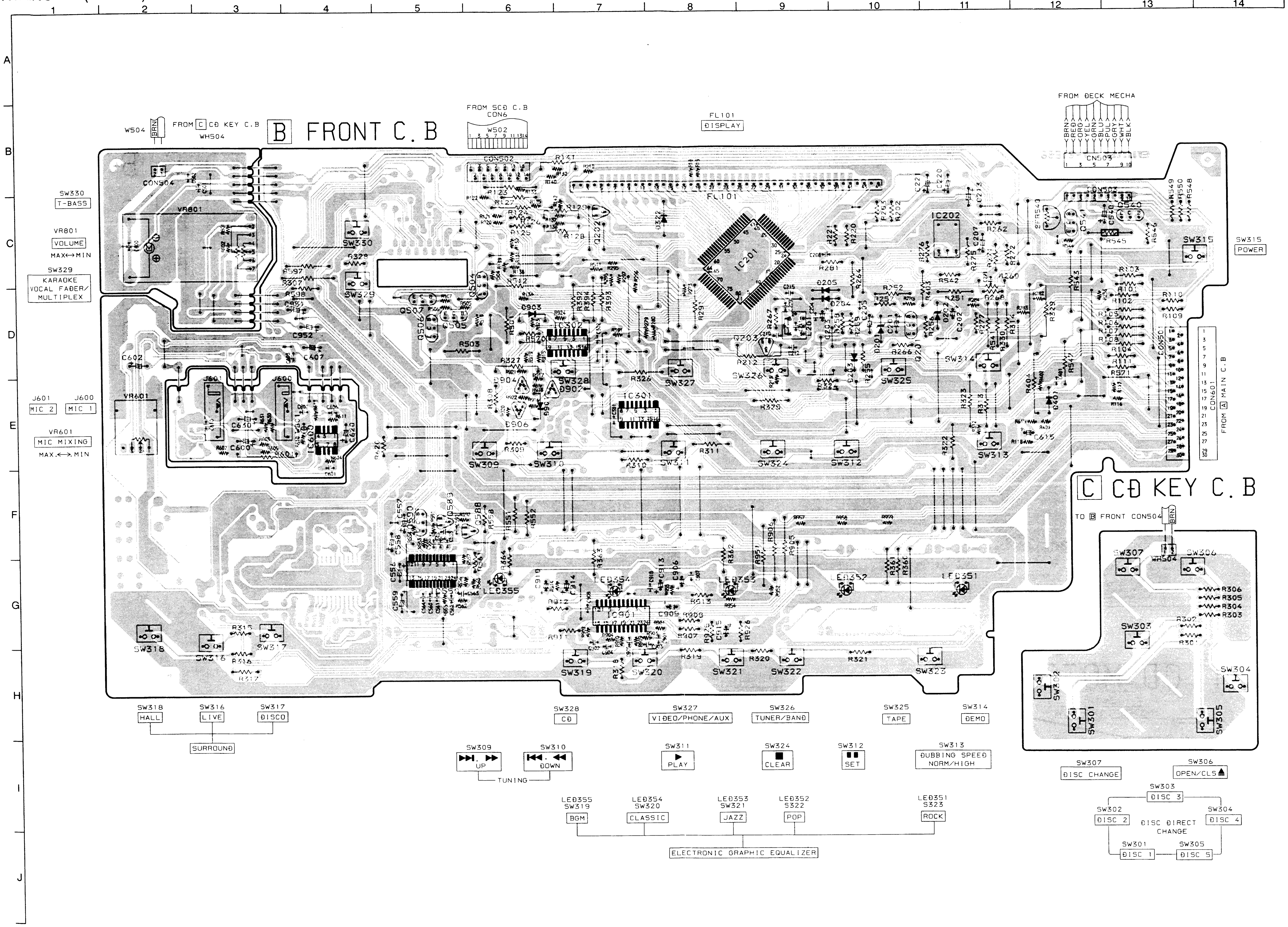
TPSW	PLAY1	REC	PLAY2
2.47	ON	ON	ON
3.21	ON	OFF	ON
4.33	ON	OFF	OFF
2.83	OFF	ON	ON
3.87	OFF	OFF	ON
5.62	OFF	OFF	OFF

※1 DIODE MATRIX

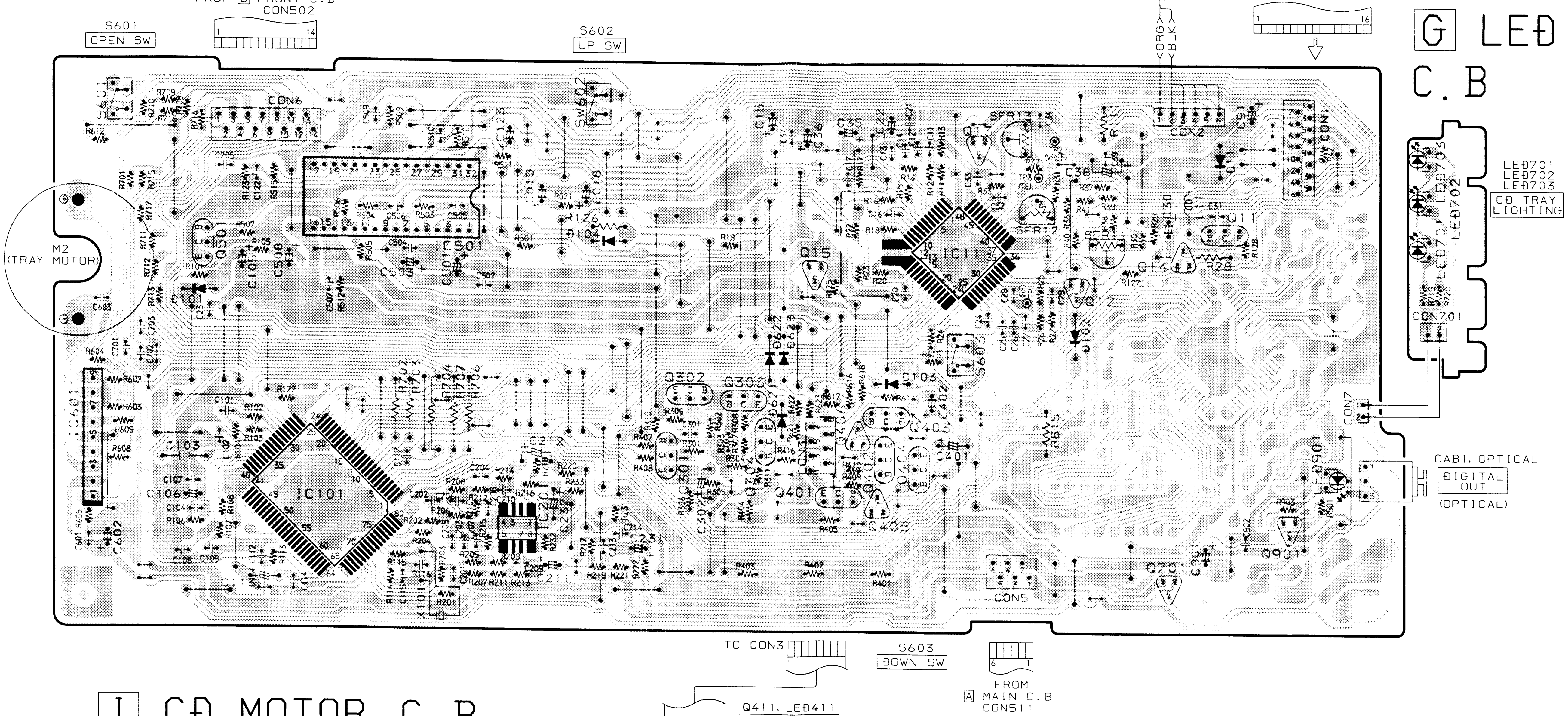
	HE/HR	LH	EEZ/EZ	K	DO
NO SUR D321 (P1)					
LW D322 (P2)			○	○	
OIRT D323 (P3)					
AM 10K D324 (P4)		○			
AM ST D325 (P5)					○
SALSA D326 (P6)		○			
PROLOGIC D327 (P7)					

VOLTAGE
0
1.135
2.801
4.99
6.88
8.95

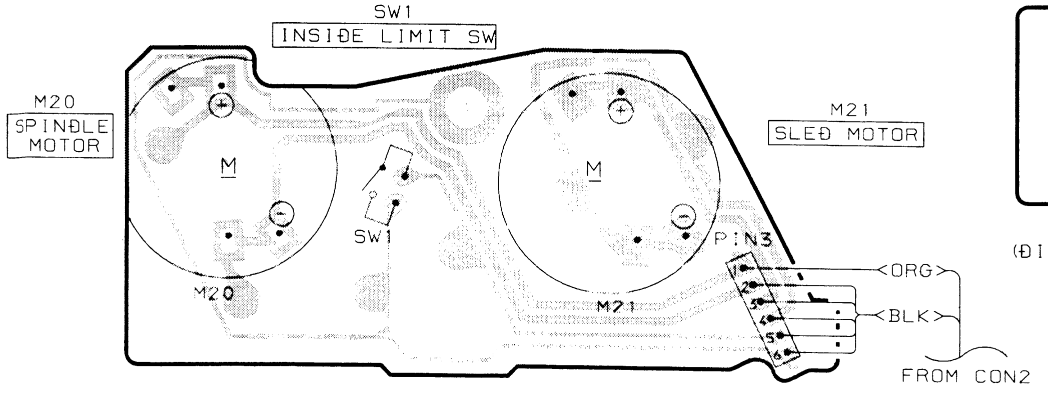
WIRING – 2 (FRONT)

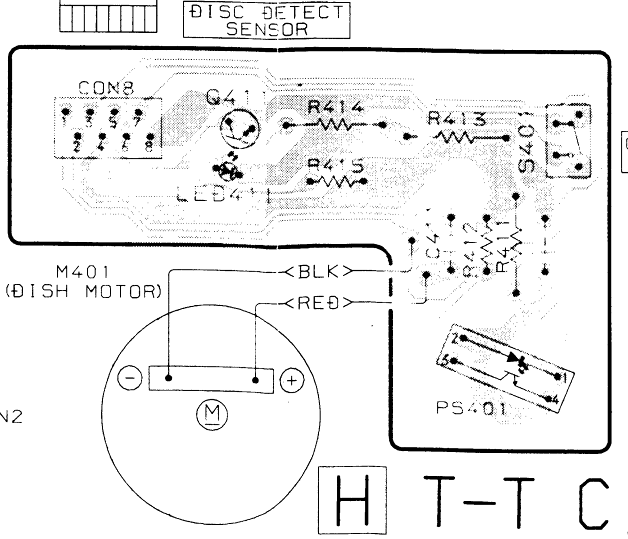

B FRONT C.B
C CD KEY C.B
FROM C CD KEY C.B WH504
W504
FROM SCD C.B CON6
W502
FL101 DISPLAY
FROM DECK MECHA
CN503
BRN RED ORG YEL GRN BLU PUL GRY WHT BLK
CON601 FROM A MAIN C.B
TO B FRONT CON504
SW330 T-BASS
VR801 VOLUME MAX↔MIN
SW329 KARAOKE VOCAL FADER/MULTIPLEX
J601 MIC 2
J600 MIC 1
VR601 MIC MIXING MAX.↔MIN
SW315 POWER
SW318 HALL
SW316 LIVE
SW317 DISCO
SURROUND
SW328 CD
SW327 VIDEO/PHONE/AUX
SW326 TUNER/BAND
SW325 TAPE
SW314 DEMO
SW309 ▶▶I, ▶▶ UP
SW310 I◀◀, ◀◀ DOWN
TUNING
SW311 ▶ PLAY
SW324 ■ CLEAR
SW312 ▮▮ SET
SW313 DUBBING SPEED NORM/HIGH
LED355 SW319 BGM
LED354 SW320 CLASSIC
LED353 SW321 JAZZ
LED352 S322 POP
LED351 S323 ROCK
ELECTRONIC GRAPHIC EQUALIZER
SW307 DISC CHANGE
SW306 OPEN/CLS▲
SW303 DISC 3
SW302 DISC 2
SW304 DISC 4
DISC DIRECT CHANGE
SW301 DISC 1
SW305 DISC 5

F CD MAIN C.B


FROM B FRONT C.B CON502
1
14
S601
OPEN SW
S602
UP SW
TO CD MOTOR C.B
ORG
BLK
TO PICK UP
1
16
G LED C.B
LED701
LED702
LED703
CD TRAY LIGHTING
CON701
CON7
CABI. OPTICAL
DIGITAL OUT
(OPTICAL)
M2
(TRAY MOTOR)
CON6
CON2
CON1
CON5
IC101
IC11
IC501
IC601
IC201
Q11
Q12
Q14
Q15
Q301
Q302
Q303
Q401
Q402
Q403
Q404
Q405
Q501
Q701
Q901
SFR11
SFR13
S601
S602
S603
LED901
X101
TO CON3
S603
DOWN SW
6
1
FROM
A MAIN C.B
CON511

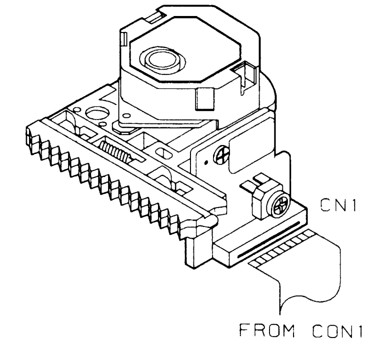
I CD MOTOR C.B


SW1
INSIDE LIMIT SW
M20
SPINDLE MOTOR
M21
SLED MOTOR
M
M
SW1
M20
M21
PIN3
ORG
BLK
FROM CON2

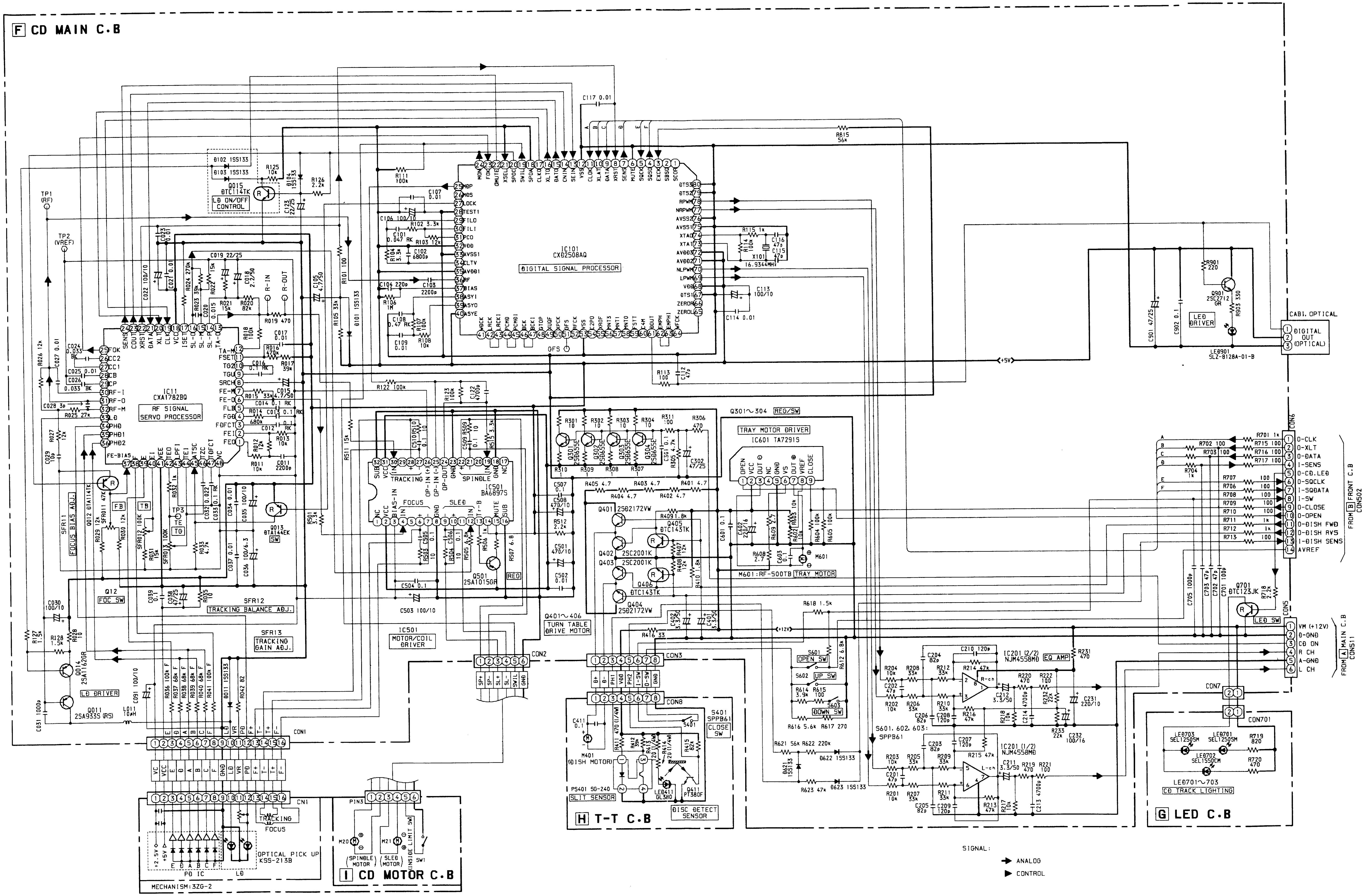

Q411, LED411
DISC DETECT SENSOR
CON8
Q411
R414
R413
R415
LED411
S401
S401
CLOSE SW
C411
R412
R411
M401
(DISH MOTOR)
BLK
RED
M
PS401

H T-T C.B

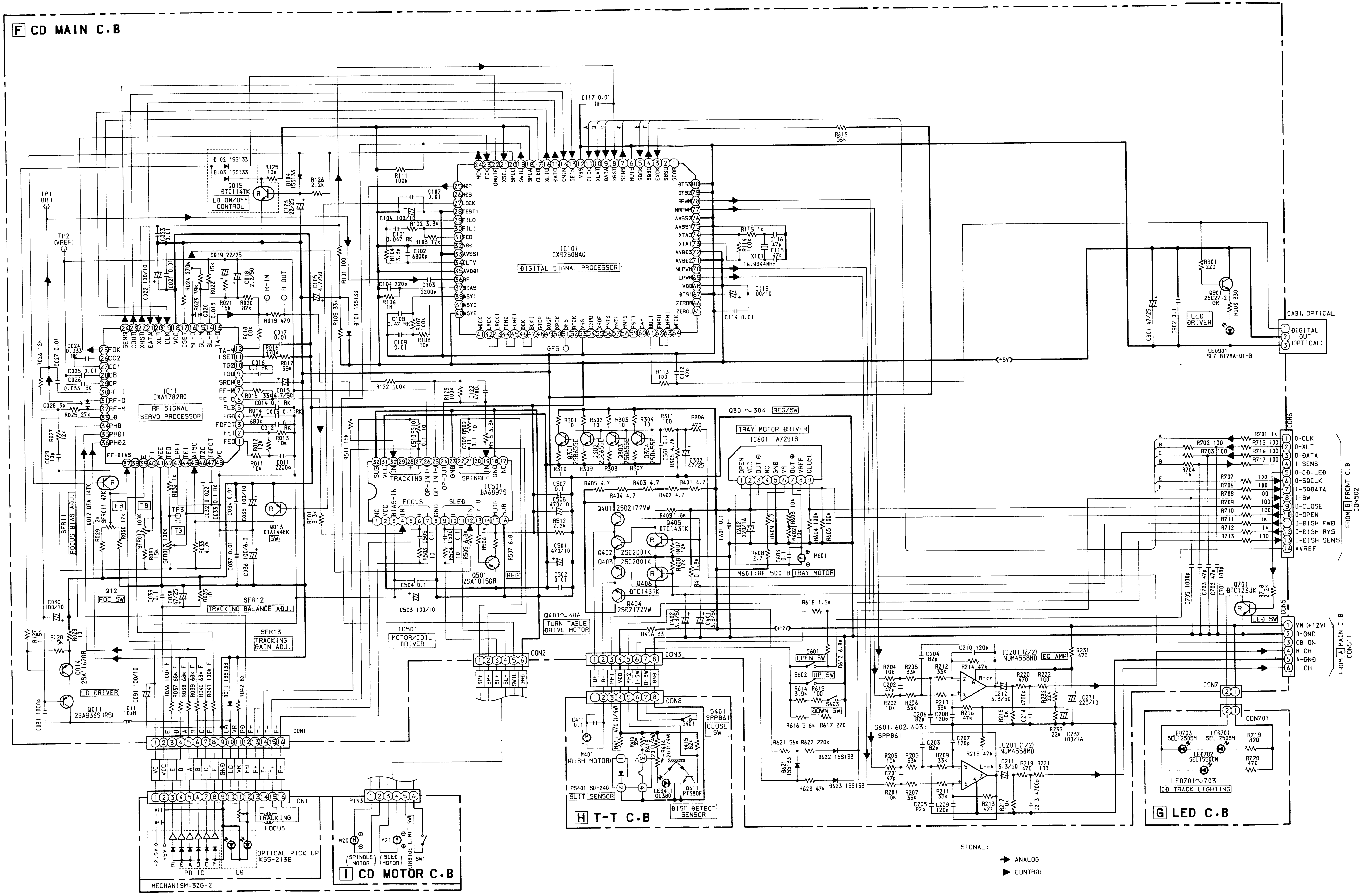
PICK UP ASSY


CN1
FROM CON1

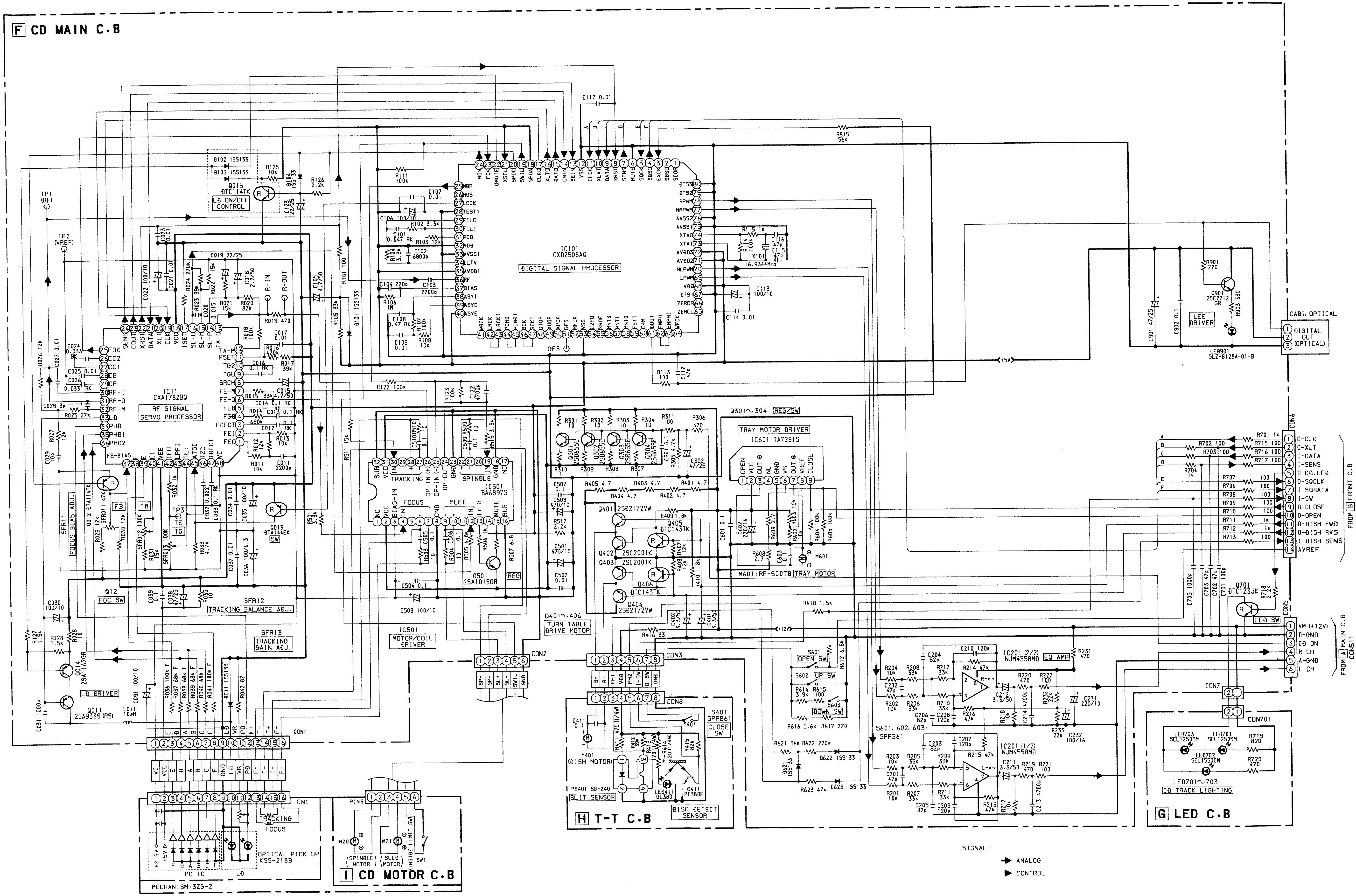
SCHEMATIC DIAGRAM – 3 (CD)


F CD MAIN C.B
IC101 CXD2508AQ
DIGITAL SIGNAL PROCESSOR
IC11 CXA1782BQ
RF SIGNAL SERVO PROCESSOR
IC501 BA6897S
IC501 MOTOR/COIL DRIVER
Q015 DTC114TK
LD ON/OFF CONTROL
Q014 2SA1162GR
Q011 2SA933S (RS)
LD DRIVER
Q012 DTA114TK
FOCUS BIAS ADJ.
Q12 FOC SW
Q013 DTA144EK SW
SFR11
SFR12 TRACKING BALANCE ADJ.
SFR13 TRACKING GAIN ADJ.
Q501 2SA1015GR REG
Q301~304 REG/SW
TRAY MOTOR DRIVER
IC601 TA7291S
M601:RF-500TB TRAY MOTOR
Q401~406 TURN TABLE DRIVE MOTOR
X101 16.9344MHz
TP1 (RF)
TP2 (VREF)
GFS
CON1
CON2
CON3
CON5
CON6
CON7
CON8
CON701
CABI. OPTICAL
DIGITAL OUT (OPTICAL)
LED DRIVER
Q901 2SC2712 GR
LE0901 SLZ-8128A-01-B
Q701 DTC123JK
LED SW
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
AVREF
FROM B FRONT C.B CON502
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM A MAIN C.B CON511
S601 OPEN SW
S602 UP SW
S603 DOWN SW
S601, 602, 603: SPPB61
H T-T C.B
S401 SPPB61 CLOSE SW
M401 DISH MOTOR
PS401 SG-240 SLIT SENSOR
LE0411 GL3RD
Q411 PT380F
DISC DETECT SENSOR
G LED C.B
LE0701~703 CD TRACK LIGHTING
TRACKING
FOCUS
OPTICAL PICK UP KSS-213B
PD IC
LD
MECHANISM:3ZG-2
SPINDLE MOTOR
SLED MOTOR
INSIDE LIMIT SW
SW1
I CD MOTOR C.B
SIGNAL:
ANALOG
CONTROL

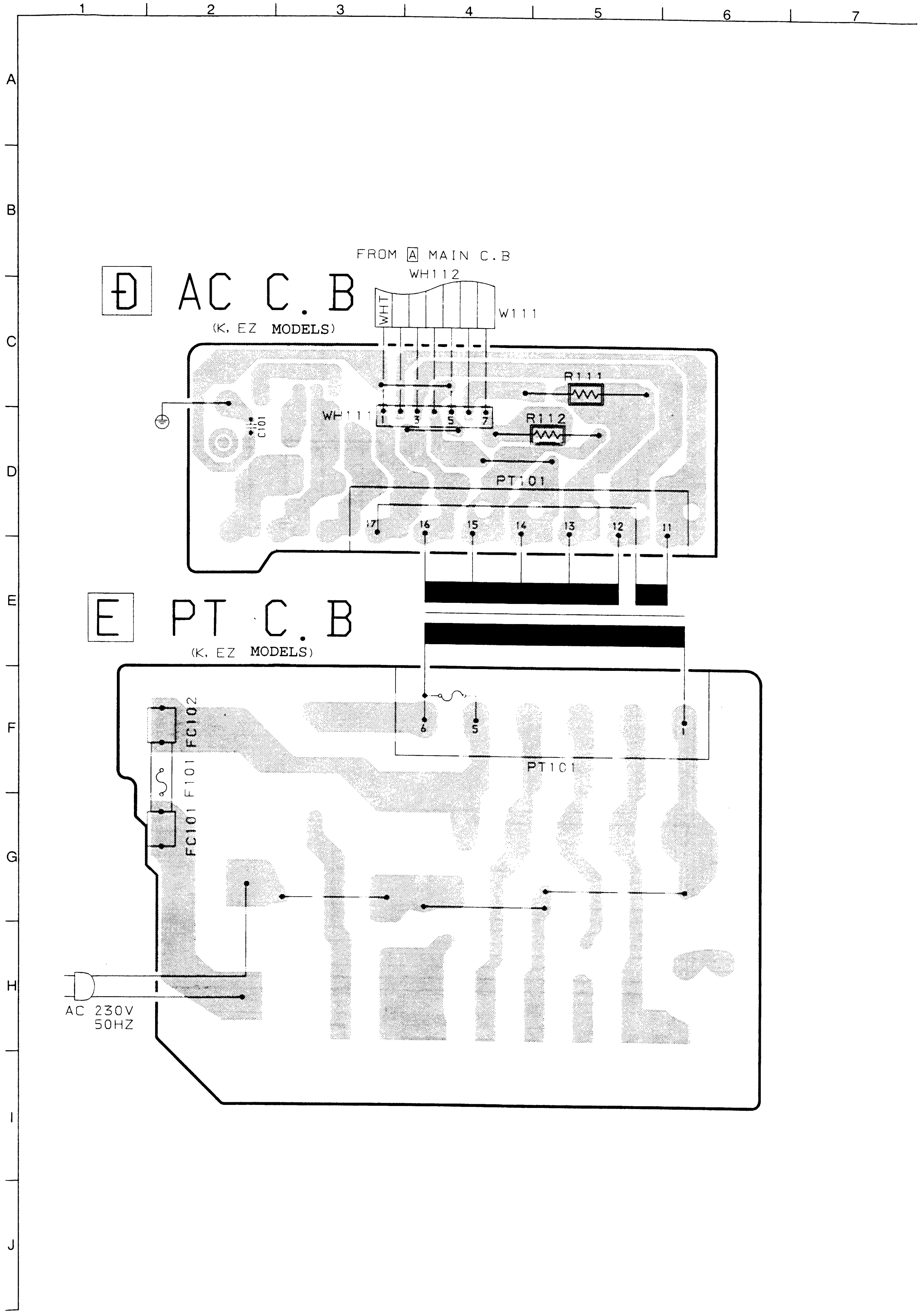
SCHEMATIC DIAGRAM – 3 (CD)


F CD MAIN C.B
IC101 CXD2508AQ DIGITAL SIGNAL PROCESSOR
IC11 CXA1782BQ RF SIGNAL SERVO PROCESSOR
IC501 BA6897S
IC501 MOTOR/COIL DRIVER
IC601 TA7291S
TRAY MOTOR DRIVER
Q301~304 REG/SW
Q401~406 TURN TABLE DRIVE MOTOR
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
Q015 DTC114TK LD ON/OFF CONTROL
Q011 2SA933S (RS)
Q014 2SA1162GR
LD DRIVER
Q012 DTA114TK
Q013 DTA144EK SW
Q12 FOC SW
Q501 2SA1015GR REG
SFR11 FOCUS BIAS ADJ.
SFR12 TRACKING BALANCE ADJ.
SFR13 TRACKING GAIN ADJ.
TP1 (RF)
TP2 (VREF)
TP3 TE
X101 16.9344MHz
M601: RF-500TB TRAY MOTOR
Q901 2SC2712 GR
LED DRIVER
LE0901 SLZ-8128A-01-B
CAB1, OPTICAL
DIGITAL OUT (OPTICAL)
Q701 DTC123JK
LED SW
CON2
CON3
CON5
CON6
CON7
CON8
CON1
CN1
CON701
FROM B FRONT C.B CON502
FROM A MAIN C.B CON511
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
D-CLK
D-XLT
D-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
AVREF
S601 OPEN SW
S602 UP SW
S603 DOWN SW
S601, 602, 603: SPPB61
S401 SPPB61 CLOSE SW
M401 (DISH MOTOR)
PS401 SG-240 SLIT SENSOR
LE0411 GL380
Q411 PT380F
DISC DETECT SENSOR
H T-T C.B
G LED C.B
LE0701~703 CD TRACK LIGHTING
LE0703 SEL1250SM
LE0701 SEL1250SM
LE0702 SEL1550CM
OPTICAL PICK UP KSS-213B
PD IC
LD
MECHANISM: 3ZG-2
TRACKING
FOCUS
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
I CD MOTOR C.B
SIGNAL:
ANALOG
CONTROL
+5V
+12V
GFS

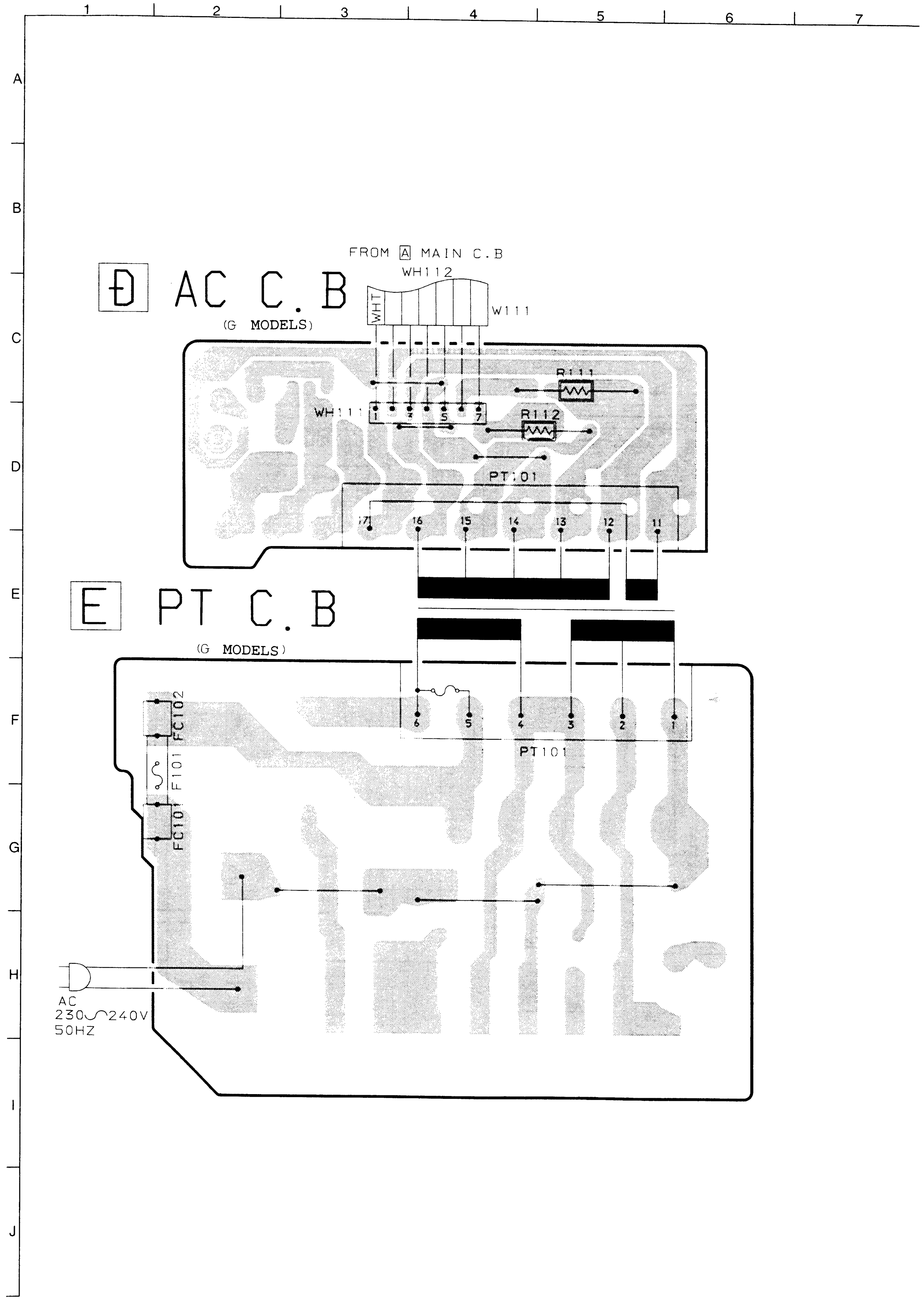
SCHEMATIC DIAGRAM – 3 (CD)


F CD MAIN C.B
IC101 CXD2508AQ
DIGITAL SIGNAL PROCESSOR
IC11 CXA1782BQ
RF SIGNAL SERVO PROCESSOR
IC501 BA6897S
IC501 MOTOR/COIL DRIVER
Q015 DTC114TK
LD ON/OFF CONTROL
TP1 (RF)
TP2 (VREF)
SFR11 FOCUS BIAS ADJ.
SFR12 TRACKING BALANCE ADJ.
SFR13 TRACKING GAIN ADJ.
Q12 FOC SW
Q013 DTA144EK SW
Q014 2SA1162OR
Q011 2SA933S (RS)
LD DRIVER
Q501 2SA1015GR
REG
X101 16.9344MHz
Q301~304 REG/SW
TRAY MOTOR DRIVER
IC601 TA7291S
M601:RF-500TB TRAY MOTOR
Q401~406 TURN TABLE DRIVE MOTOR
Q401 2SD2172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SD2172VW
Q405 DTC143TK
Q406 DTC143TK
CON1
CON2
CON3
CON5
CON6
CON7
CON8
CON701
CN1
CAB1 OPTICAL
DIGITAL OUT (OPTICAL)
LED DRIVER
Q901 2SC2712 GR
LE0901 SLZ-8128A-01-B
Q701 DTC123JK
LED SW
FROM FRONT C.B CON502
FROM MAIN C.B CON511
D-CLK
D-XLT
D-DATA
I-SENS
D-CD.LED
D-SQCLK
I-SQDATA
I-SW
D-CLOSE
D-OPEN
D-DISH FWD
D-DISH RVS
I-DISH SENS
AVREF
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
S601 OPEN SW
S602 UP SW
S603 DOWN SW
S601, 602, 603: SPPB61
S401 SPPB61 CLOSE SW
M401 (DISH MOTOR)
PS401 SG-240 SLIT SENSOR
LE0411 GL3HD
Q411 PT380F
DISC DETECT SENSOR
H T-T C.B
G LED C.B
LE0701~703 CD TRACK LIGHTING
LE0703 SEL1250SM
LE0701 SEL1250SM
LE0702 SEL1550CM
OPTICAL PICK UP KSS-213B
PD IC
LD
TRACKING
FOCUS
MECHANISM:3ZG-2
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
I CD MOTOR C.B
SIGNAL:
ANALOG
CONTROL

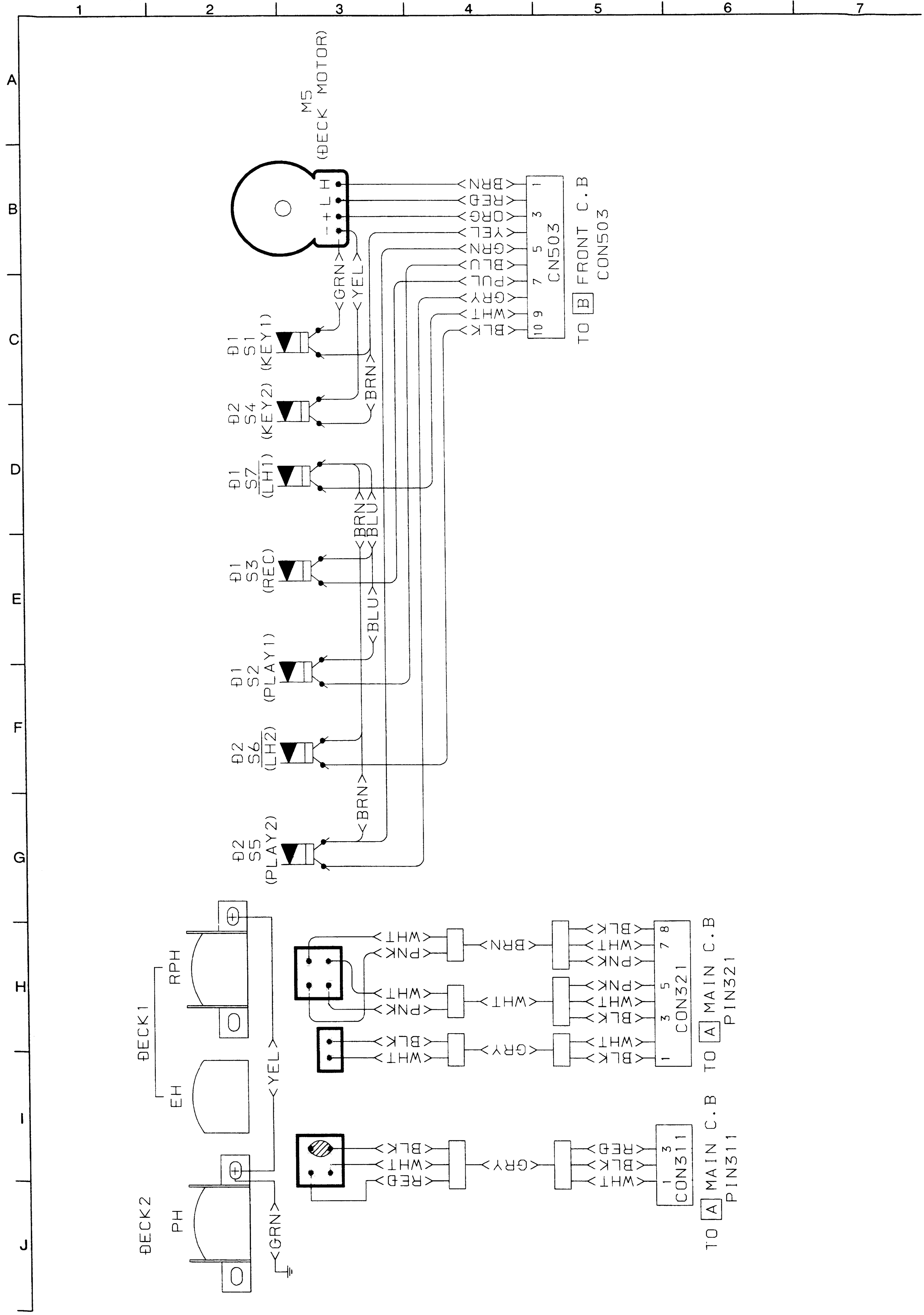
WIRING – 4 (PT : K, EZ)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
FROM A MAIN C.B
WH112
W111
WHT
D AC C.B
(K, EZ MODELS)
C101
WH111
1
3
5
7
R111
R112
PT101
17
16
15
14
13
12
11
E PT C.B
(K, EZ MODELS)
FC102
F101
F101
FC101
6
5
1
PT101
AC 230V
50HZ

WIRING – 5 (PT : G)

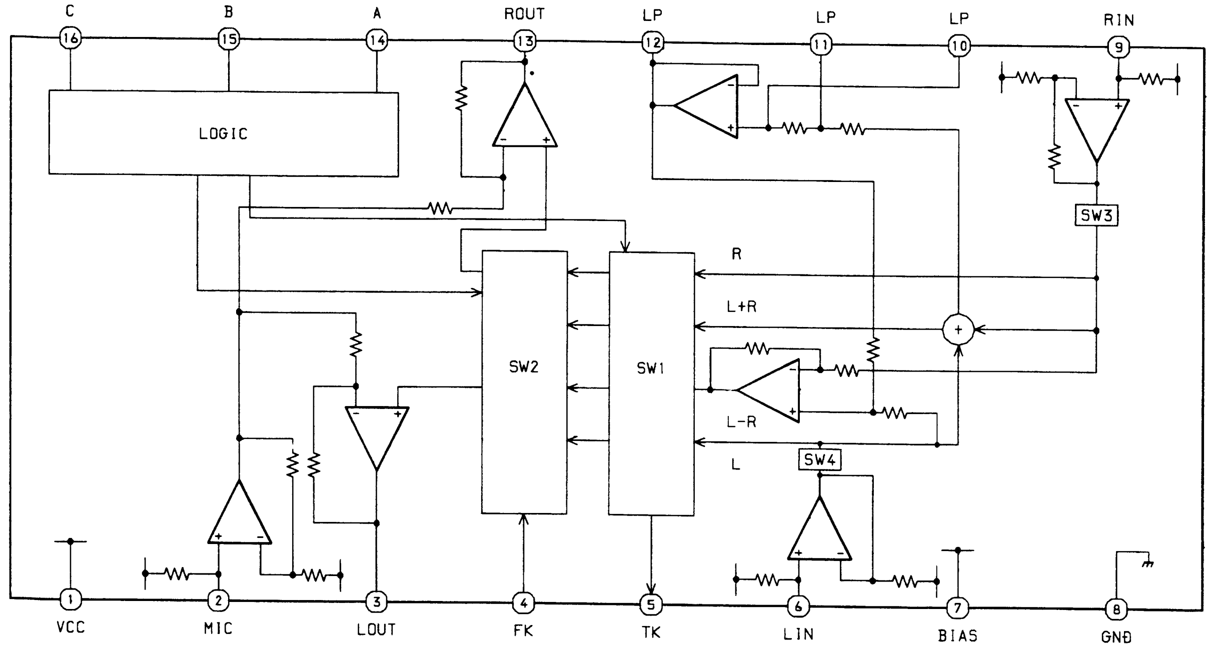

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
FROM A MAIN C.B
WH112
W111
WHT
D AC C.B
(G MODELS)
WH111
1
2
5
7
R111
R112
PT101
17
16
15
14
13
12
11
E PT C.B
(G MODELS)
FC102
F101
FC101
6
5
4
3
2
1
PT101
AC
230∽240V
50HZ

WIRING – 6 (DECK)

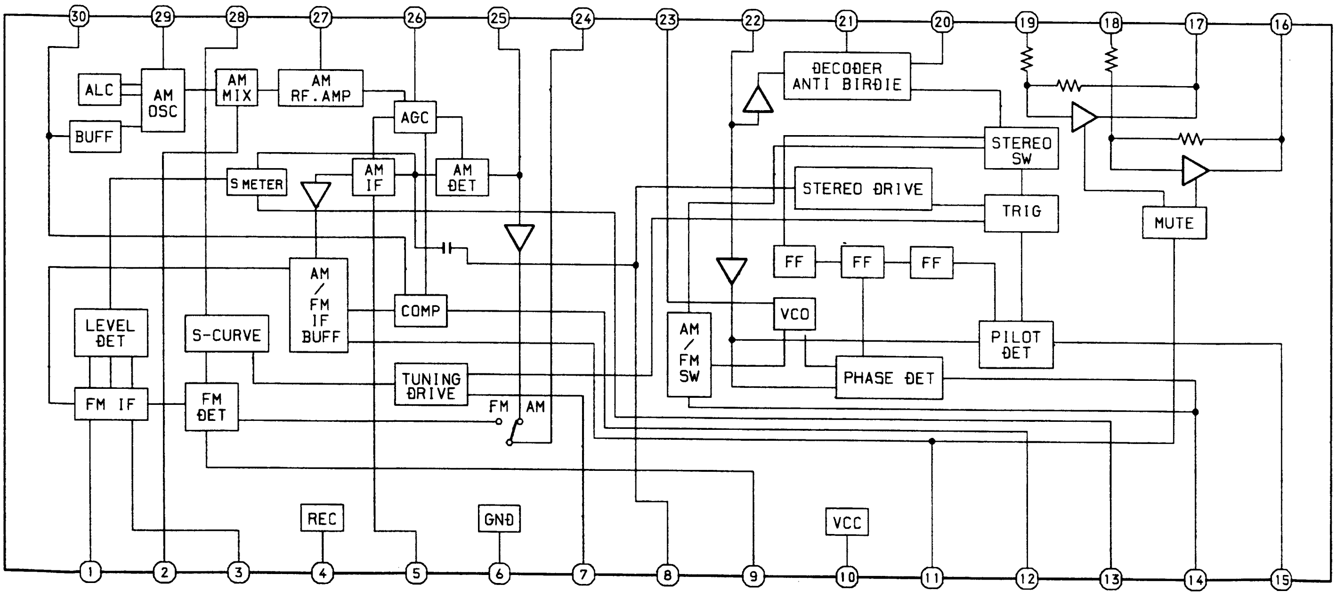

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
M5
(DECK MOTOR)
– + L H
BRN
RED
ORG
YEL
GRN
BLU
PUL
GRY
WHT
BLK
1
3
5
7
9
10
CN503
TO B FRONT C.B
CON503
GRN
YEL
D1
S1
(KEY1)
D2
S4
(KEY2)
BRN
D1
S7
(LH1)
BRN
BLU
D1
S3
(REC)
BLU
D1
S2
(PLAY1)
D2
S6
(LH2)
BRN
D2
S5
(PLAY2)
DECK1
RPH
EH
YEL
DECK2
PH
GRN
WHT
PNK
BRN
WHT
PNK
BLK
WHT
GRY
BLK
WHT
PNK
1
3
5
7
8
CON321
TO A MAIN C.B
PIN321
BLK
WHT
RED
GRY
RED
BLK
WHT
1
3
CON311
TO A MAIN C.B
PIN311

IC BLOCK DIAGRAM

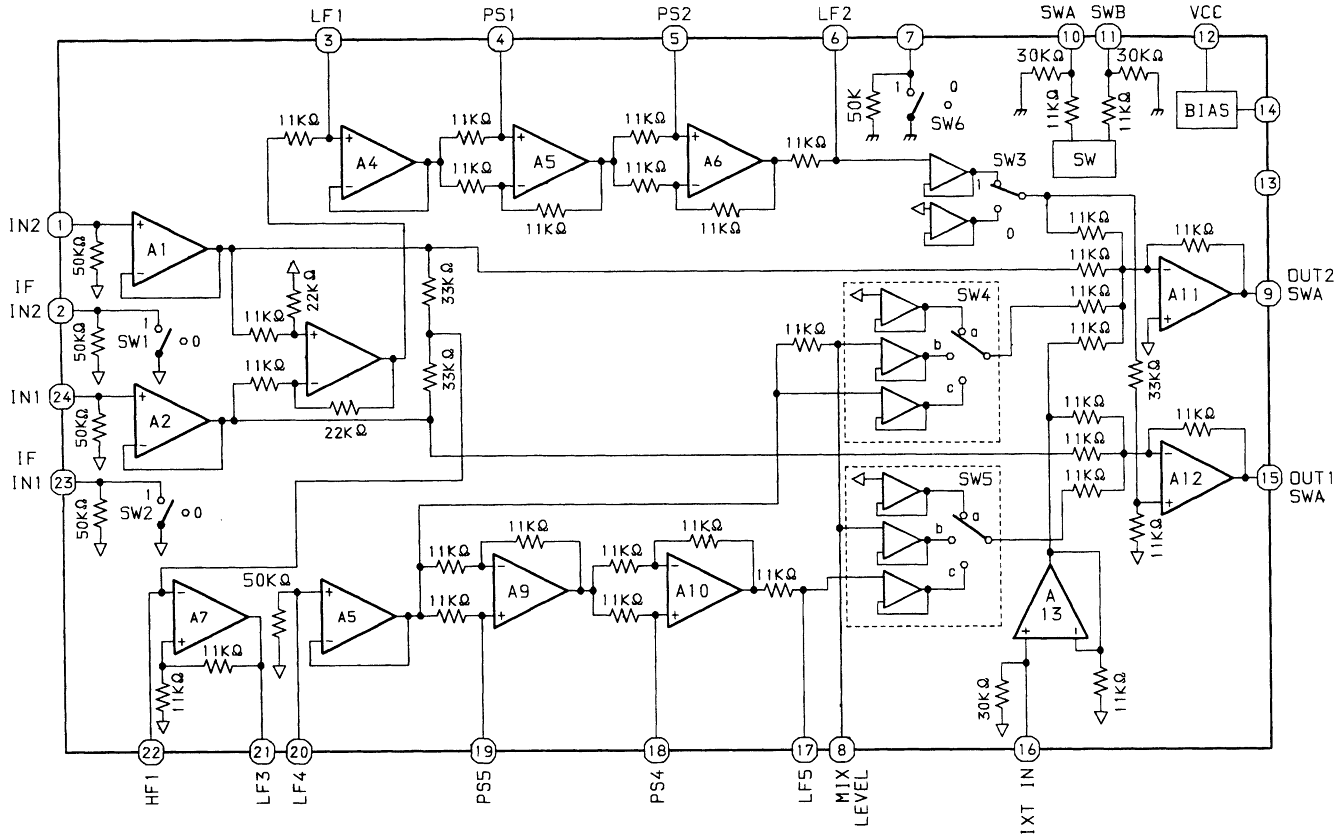
IC, BA3836


C
B
A
ROUT
LP
LP
LP
RIN
16
15
14
13
12
11
10
9
LOGIC
SW3
R
L+R
SW2
SW1
+
L-R
L
SW4
1
2
3
4
5
6
7
8
VCC
MIC
LOUT
FK
TK
LIN
BIAS
GND

IC, LA1836L

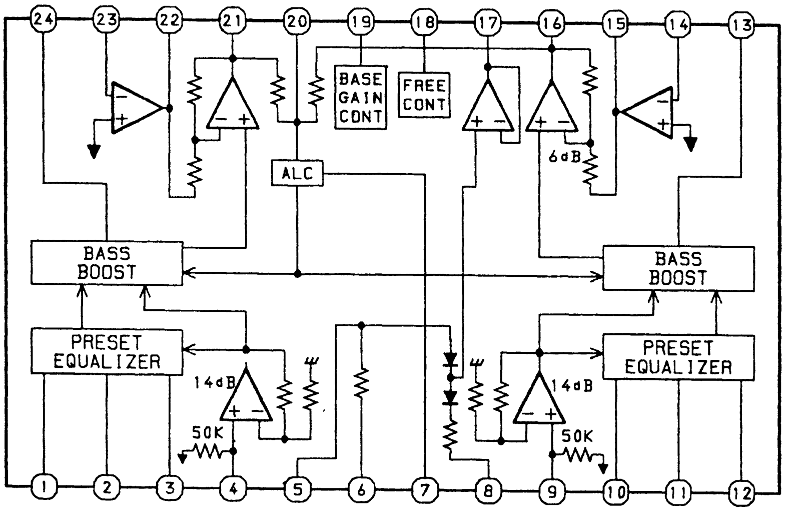

30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
ALC
AM OSC
BUFF
AM MIX
AM RF.AMP
AGC
S METER
AM IF
AM DET
DECODER ANTI BIRDIE
STEREO SW
STEREO DRIVE
TRIG
MUTE
FF
FF
FF
AM / FM IF BUFF
COMP
VCO
AM / FM SW
PILOT DET
PHASE DET
LEVEL DET
S-CURVE
FM IF
FM DET
TUNING DRIVE
FM
AM
REC
GND
VCC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

IC, TA2041F



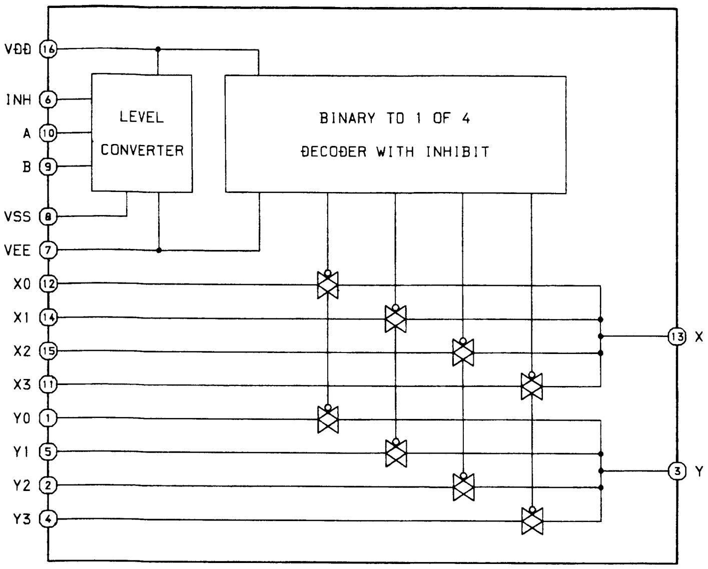
LF1
PS1
PS2
LF2
SWA
SWB
VCC
30KΩ
30KΩ
50K
SW6
BIAS
SW
SW3
11KΩ
A4
A5
A6
A1
A2
A7
A9
A10
A11
A12
A 13
IN2
IF IN2
IN1
IF IN1
50KΩ
SW1
SW2
22KΩ
33KΩ
SW4
SW5
OUT2 SWA
OUT1 SWA
HF1
LF3
LF4
PS5
PS4
LF5
MIX LEVEL
EXT IN

IC, BA3842F

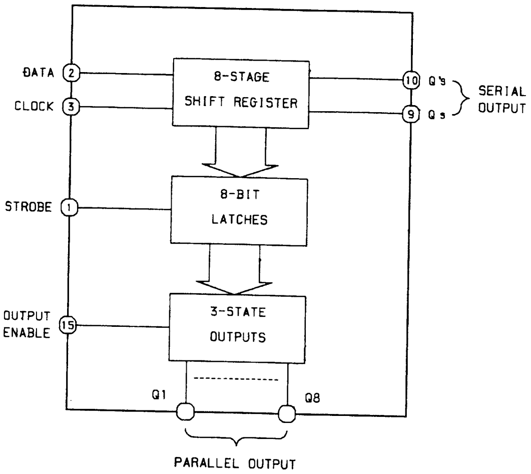


BASE GAIN CONT
FREE CONT
ALC
6dB
BASS BOOST
BASS BOOST
PRESET EQUALIZER
PRESET EQUALIZER
14dB
14dB
50K
50K

IC, BU4052BC


VDD 16
INH 6
A 10
B 9
VSS 8
VEE 7
X0 12
X1 14
X2 15
X3 11
Y0 1
Y1 5
Y2 2
Y3 4
LEVEL CONVERTER
BINARY TO 1 OF 4 DECODER WITH INHIBIT
13 X
3 Y

IC, BU4094BC/BCF


DATA 2
CLOCK 3
STROBE 1
OUTPUT ENABLE 15
8-STAGE SHIFT REGISTER
8-BIT LATCHES
3-STATE OUTPUTS
10 Q's
9 Qs
SERIAL OUTPUT
Q1
Q8
PARALLEL OUTPUT

TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

X : DON'T CARE.

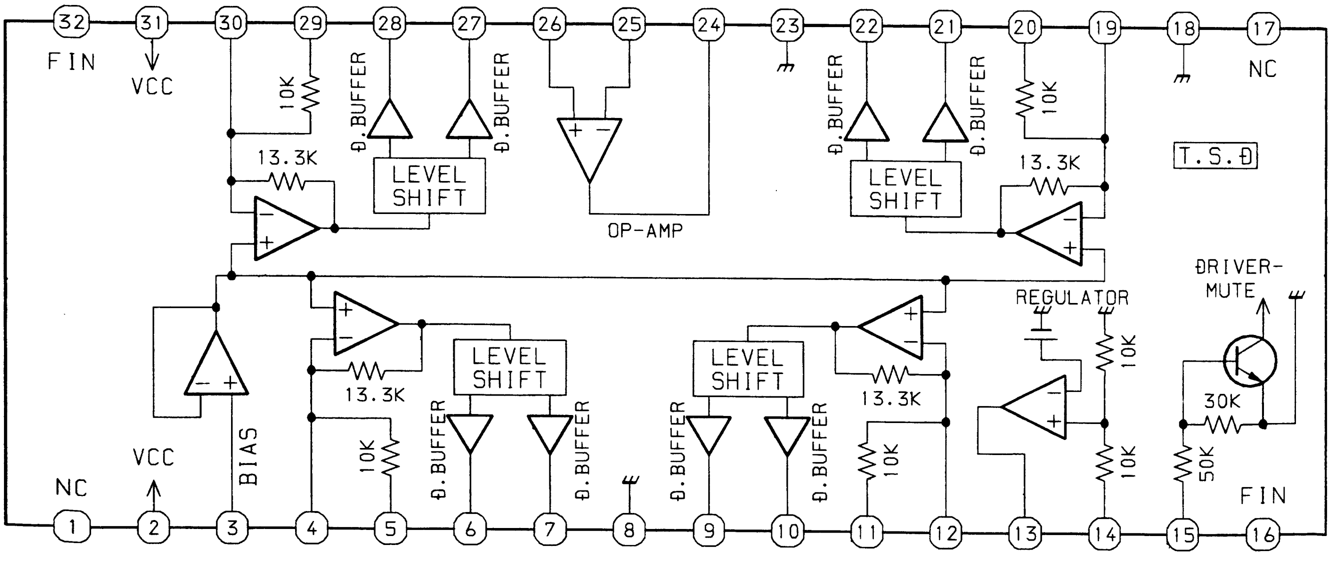
TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
↑	L	X	X	Z	Z	Q7	NO Chg.
↓	L	X	X	Z	Z	No Chg.	Qs
↑	H	L	X	No Chg.	No Chg.	Q7	No Chg.
↑	H	H	L	L	Qn-1	Q7	No Chg.
↑	H	H	H	H	Qn-1	Q7	No Chg.
↓	H	X	X	No Chg.	No Chg.	No Chg.	Qs

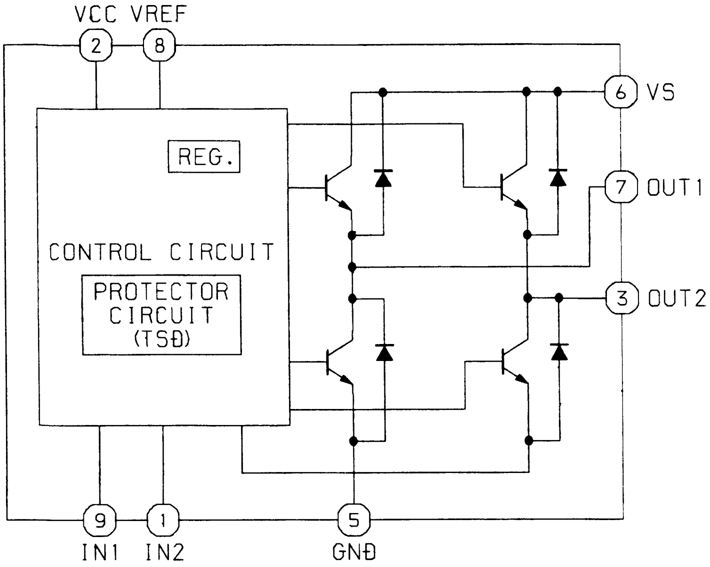
Z=High Impedance

X=Don't Care

IC, BA6897S


32 FIN
31 VCC
30
29 10K
28 D.BUFFER
27 D.BUFFER
26
25
24
23
22 D.BUFFER
21 D.BUFFER
20 10K
19
18
17 NC
13.3K
LEVEL SHIFT
OP-AMP
T.S.D
DRIVER-MUTE
REGULATOR
10K
30K
50K
BIAS
NC 1
VCC 2
3
4
5 10K
6 D.BUFFER
7 D.BUFFER
8
9 D.BUFFER
10 D.BUFFER
11 10K
12
13
14
15
16 FIN

IC, TA7291S

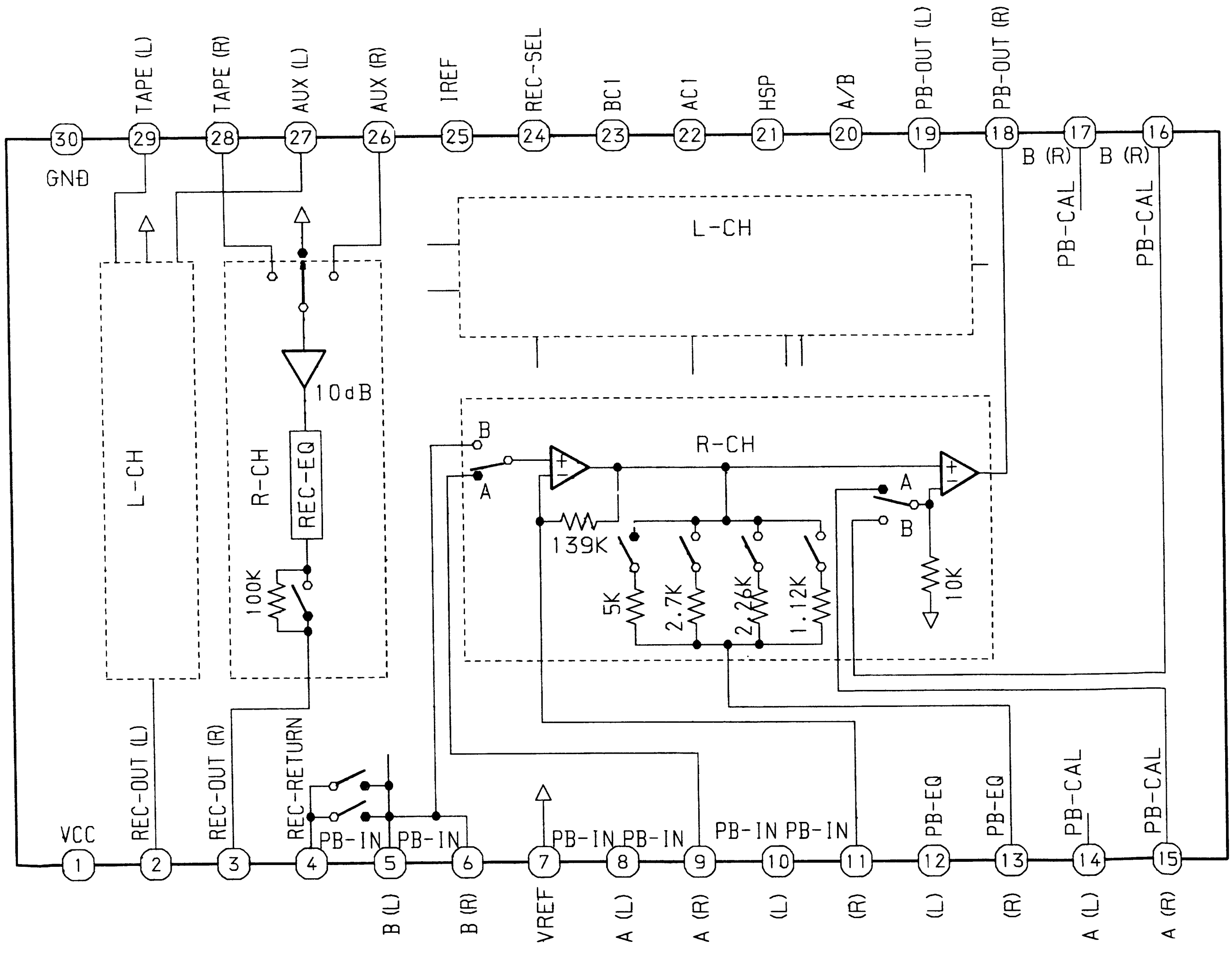

VCC
VREF
2
8
6
VS
REG.
7
OUT1
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
3
OUT2
9
1
5
IN1
IN2
GND

TRUTH TABLE

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ :HIGH IMPEDACE
INPUT IS "H" ACITVE

IC, HA12185NT


TAPE (L)
TAPE (R)
AUX (L)
AUX (R)
IREF
REC-SEL
BC1
AC1
HSP
A/B
PB-OUT (L)
PB-OUT (R)
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
GND
B (R)
B (R)
PB-CAL
PB-CAL
L-CH
L-CH
R-CH
10dB
REC-EQ
100K
B
A
R-CH
139K
5K
2.7K
2.26K
1.12K
A
B
10K
VCC
REC-OUT (L)
REC-OUT (R)
REC-RETURN
PB-IN
PB-IN
PB-IN
PB-IN
PB-IN PB-IN
PB-EQ
PB-EQ
PB-CAL
PB-CAL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
B (L)
B (R)
VREF
A (L)
A (R)
(L)
(R)
(L)
(R)
A (L)
A (R)

IC DESCRIPTION

IC, CXD2508AQ

Pin No.	Pin Name	I/O	Description
1	SCOR	O	Outputs high signal when either subcode sync S0 or S1 is detected. (Not used)
2	SBSO	O	SUB P to W serial output. (Not used)
3	EXCK	I	SBSO readout clock input. (Connected to VDD)
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	SQSO readout clock input.
6	MUTE	I	High to mute. Low to cancel.
7	SENS	O	SENS signal output to main CPU.
8	XRST	I	System reset. Reset when low.
9	DATA	I	Serial data input from main CPU.
10	XLAT	I	Latch input from main CPU. Serial data is latched at the falling edge.
11	CLOK	I	Serial data transfer clock input from main CPU.
12	VSS	–	GND.
13	SEIN	I	Sense input from SSP (CXA1782BQ).
14	CNIN	I	Track jump count signal input.
15	DATO	O	Serial data output to SSP (CXA1782BQ).
16	XLTO	O	Serial data latch output to SSP (CXA1782BQ). Latched at the falling edge.
17	CLKO	O	Serial data transfer clock output to SSP (CXA1782BQ).
18	SPOA	I	Test pin. Normally connected to VDD.
19	SWIL	I	Microcomputer extended interface (input B). (Connected to SW1)
20	SPOC	I	Microcomputer extended interface (input C). (Connected to VDD)
21	XSEL	I	Microcomputer extended interface (input D). (Connected to VDD)
22	GMUTE	O	Microcomputer extended interface (output).
23	FOK	I	Focus OK input. Used for SENS output and the servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output. (Not used)
27	LOCK	O	GFS is sampled at 460 Hz. When GFS is high, this pin outputs a high signal. If GFS is low eight consecutive samples, this pin outputs low.
28	TEST1	I	TEST pin. Normally connected to GND.
29	FILO	O	Master PLL (slave = digital PLL) filter output.
30	FILI	I	Master PLL filter input.
31	PCO	O	Master PLL charge pump output.
32	VDD	–	Digital power supply (+5V).
33	AVSS1	–	GND.
34	CLTV	I	Master PLL VCO control voltage input.
35	AVDD1	–	Analog power supply (+5V).
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparator voltage input to asymmetry correction circuit .
39	ASYO	O	EFM full swing output (Low = VSS, High = VDD).
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON. (Connected to VDD)

Pin No.	Pin Name	I/O	Description
41	WDCK	O	D/A interface for 48-bit slot. Word clock (2FS). (Not used)
42	LRCK	O	D/A interface for 48-bit slot. LR clock (FS).
43	LRCKI	I	LR clock input for DAC. (48-bit slot)
44	PCMD	O	D/A interface. Serial data (two's complement, MSB first).
45	PCMDI	I	Audio data input for DAC. (48-bit slot)
46	BCK	O	D/A interface. Bit clock.
47	BCKI	I	Bit clock input for DAC. (48-bit slot)
48	GTOP	O	GTOP output. (Not used)
49	XUGF	O	XUGF output. (Not used)
50	XPCK	O	XPLCK output. (Not used)
51	GFS	O	GFS output. (Not used)
52	RFCK	O	RFCK output. (Not used)
53	VSS	–	GND.
54	C2PO	O	C2PO output. (Not used)
55	XROF	O	XRAOF output. (Not used)
56	MNT3	O	MNT3 output. (Not used)
57	MNT1	O	MNT1 output. (Not used)
58	MNT0	O	MNT0 output. (Not used)
59	FSTT	O	2/3 frequency divider output for Pins 73 and 74. (Not used)
60	C4M	O	4.2336 MHz output. (Not used)
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	Outputs high signal when the playback disc has emphasis, low signal when no emphasis.
63	EMPHI	I	DAC de-emphasis ON/OFF. High: on; low: off.
64	WFCK	O	WFCK (Write Frame Clock) output. (Not used)
65	ZEROL	O	No sound data detection output. High (L-ch) when no sound data is detected. (Not used)
66	ZEROR	O	No sound data detection output. High (R-ch) when no sound data is detected. (Not used)
67	DTSI	I	Test pin for DAC; normally low. (Connected to GND)
68	VDD	–	Digital power supply. (+5V).
69	LPWM	O	Left channel PWM output. (Forward phase)
70	NLPWM	O	Left channel PWM output. (Reverse phase)
71	AVDD2	–	Power supply for left channel PWM driver (+5V).
72	AVDD3	–	Power supply for crystal (+5V).
73	XTAI	I	33.8688 MHz crystal oscillator circuit input.
74	XTAO	O	33.8688 MHz crystal oscillator circuit output.
75	AVSS1	–	GND for crystal.
76	AVSS2	–	GND for PWM driver.
77	NRPWM	O	Right channel PWM output. (Reverse phase)
78	RPWM	O	Right channel PWM output. (Forward phase)
79	DTS2	I	DAC test pin 2; normally low. (Connected to GND)
80	DTS3	I	DAC test pin 3; normally low. (Connected to GND)

Pin No.	Pin Name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for the time constant used when there is defect.
4	FGD	I	Corrects the focus servo high frequency gain.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive ouput.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	–	Power supply (+5V).
19	CLK	I	Serial data transfer clock input from main CPU.
20	XLT	I	Latch input from main CPU.
21	DATA	I	Serial data input from main CPU.
22	XRST	I	Reset input pin. Reset at low.
23	COUNT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from main CPU.
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled
31	RFO	O	RF summing amplifier output pin.
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin Name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35 ~ 36	PHD 1 ~ 2	I	RF I–V amplifier inverted input pins. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE-BIAS	I	Bias adjustment pin of the non-inverted side of the focus error amplifier.
38 ~ 39	F ~ E	I	F and E I–V amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	–	Gain adjustment pin of the I–V amplifier E.
41	VEE	–	GND connection pin.
42	TEO	O	Tracking error amplifier output pin. E–F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
45	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, LC866440W-5B28

Pin No.	Pin Name	I/O	Description
1	O-REC SEL	O	Record select.
2	O-PLL CE	O	PLL enable.
3	O-MSTB	O	Main shift register strobe output.
4	O-MDATA(P/DATA)	O	Main shift register data output.
5	O-MCLK(P/CLK)	O	Main shift register clock output.
6	O-C-SHIFT	O	Clock shift output·
7	$\overline{\text{RST}}$	I	Micon reset pin.
8	I-$\overline{\text{HOLD}}$	I	Micon hold signal.
9	I-$\overline{\text{TUNE/IFC}}$	I	Tune/Ifc.
10	VSS1	–	D-GND.
11,12	CF1,CF2	I	5.76MHz clock oscillator input.
13	VDD1	–	Power supply terminal (+5.6V).
14	I-KEY1	I	Key matrix 1 input.
15	I-KEY2	I	Key matrix 2 input
16	I-$\overline{\text{HP MUTE}}$	I	Not use.
17	I-CD/SW	I	A/D CD switch position.
18	I-CD/DISH	I	A/D CD dish.
19	I-TP SW	I	A/D deck switch position.
20	I-$\overline{\text{STEREO}}$	I	Tuner stereo on.
21	I-MIC	I	A/D MIC input level.
22	I-TM/BASE	I	Time base input (8/50/60 Hz).
23	I-$\overline{\text{CD/SENSE}}$	I	Sub code Q data list.
24	I-$\overline{\text{RMC}}$	I	Remote control input (active low).
25~33	G9~G1	O	FL grid output (G9~G1).
34~40	P25~P19	O	FL segment P25~P19.
41	VDD2	–	Power supply terminal (+5.6V).
42	-VP	–	-VFL.
43~51	P18~P10	O	FL segment P18~P10.
52	P1/I-NO SURR	O	FL segment P1/NO surround.
53	P2/I-LW	O	FL sebment P2/LW.
54	P3/I-OIRT	O	FL segment P3/OIRT.
55	P4/I-AM 10K	O	FL segment P4/AM 10k step.
56	P5/I-AM ST	O	FL segment P5/AM Stereo.
57	P6/I-SALSA	O	FL segment P6/SALSA mode (GEQ).
58	P7/I-PROLOGIC	O	FL segment P7/PRO-LOGIC.
59,60	P8,P9	O	FL segment P8,P9.
61	O-CD LED	O	CD flash window led.
62	O-OPEN	O	CD tray open.
63	O-CLOSE	O	CD tray close.
64	O-P/STB	O	Not use.
65	O-$\overline{\text{POWER}}$	O	System power supply $\overline{\text{ON}}$/OFF output.
66	O-MVR +	O	Master volume control up.
67	O-MVR -	O	Master volume control down.
68	O-MUTE	O	Mute ON/$\overline{\text{OFF}}$
69	O-$\overline{\text{KEY SCAN}}$	O	Key scan enable.
70	O-F STB	O	Strobe signal for front control shift register.
71	O-F CLK	O	Clock signal for front control shift register.
72	O-F DATA	O	Data for front control shift register.
73	VSS2	–	D-GND
74	O-CD/DATA	O	Command data to CD DSP.

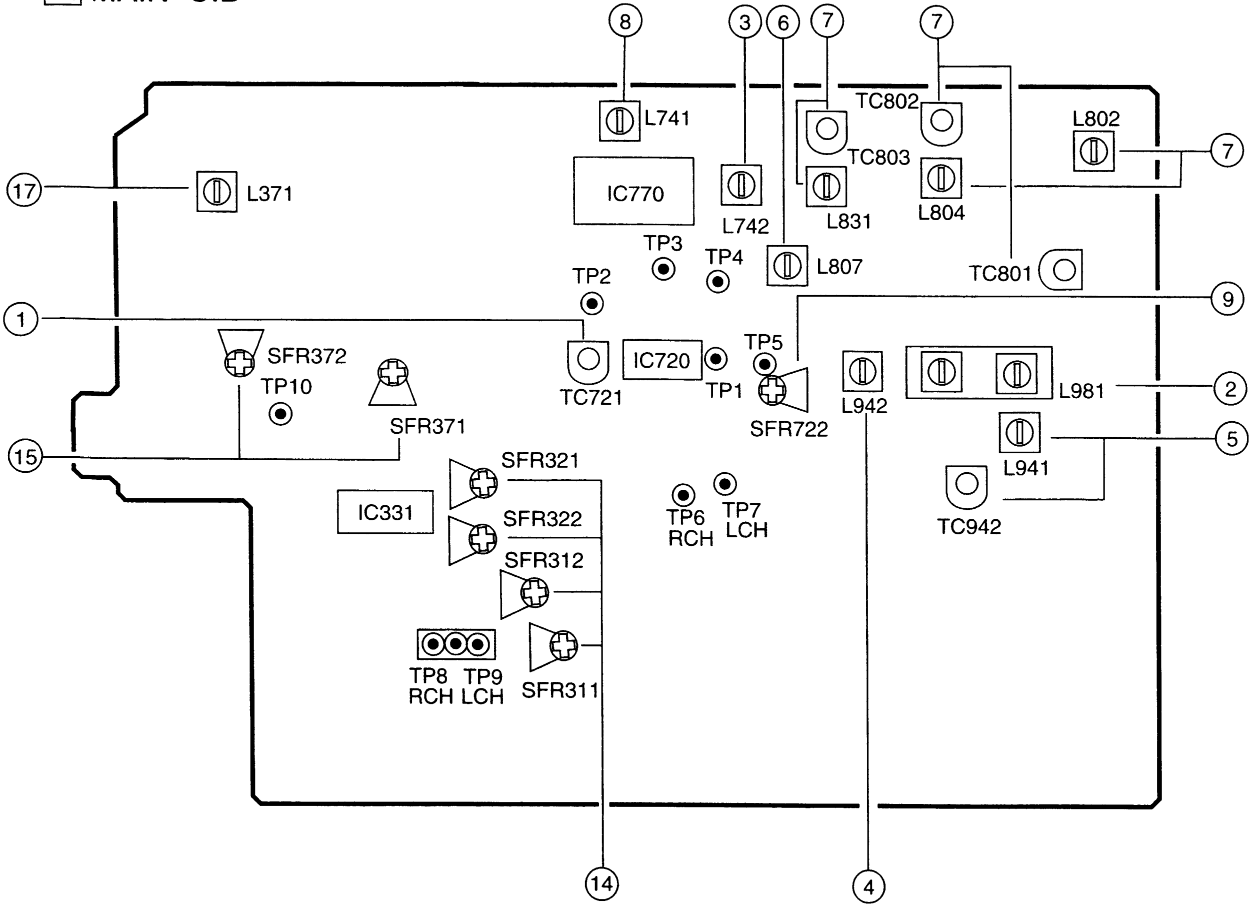
Pin No.	Pin Name	I/O	Description
75	O-CD/XLT	O	CD data enable.
76	O-CD/CLK	O	Shift clock for CD DSP.
77	O-CD/SQ.CLK	O	Sub clock for CD .
78	I-CDSQ.DATA	I	Sub code Q from CD DSP.
79	O-DI/F	O	CD dish forward.
80	O-DI/R	O	CD dish reverse.

IC, LC72131D

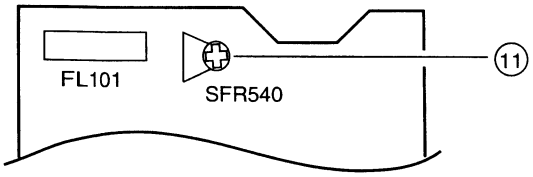
<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (7.2MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866440W-5B28) when relevant key is operated.
Active "H".</td></tr>
<tr><td>5</td><td>CLK</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866440W-5B28).</td></tr>
<tr><td>7</td><td>TM-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / AM</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IFIN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>A MIN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>F MIN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>AIN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>AOUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

ADJUSTMENT – 1 <TUNER / DECK>

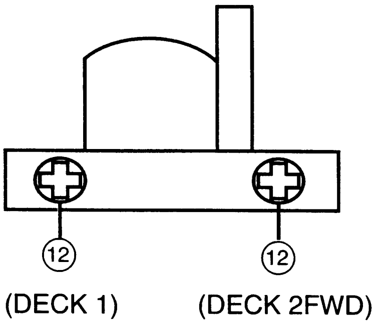
A MAIN C.B


⑧
③
⑥
⑦
⑦
L741
TC802
L802
TC803
⑦
⑰
L371
IC770
L742
L831
L804
TP3
TP4
L807
TC801
TP2
⑨
①
TC721
IC720
TP5
TP1
SFR722
L942
L981
②
SFR372
TP10
SFR371
L941
⑤
⑮
SFR321
TC942
IC331
SFR322
TP6
RCH
TP7
LCH
SFR312
TP8
RCH
TP9
LCH
SFR311
⑭
④

B FRONT C.B


FL101
SFR540
⑪

PH / RPH


⑫
⑫
(DECK 1)
(DECK 2FWD)

< TUNER SECTION >

1. Clock Frequency Adjustment
   Settings : • Test point : TP1
   • Adjustment location : TC721
   Method : Set to MW 1602kHz and adjust TC721 so that the test point becomes 2052kHz ± 0.01kHz .

2. MW Tracking Adjustment
   Settings : • Test point : TP6, TP7
   • Adjustment location :
   L981 .... 999kHz
   Method : The level at 999kHz is adjusted to MAX by L981.

3. MW IF Adjustment
   Setting : • Test point : TP6, TP7
   • Adjustment location :
   L742..450kHz

4. LW VT Adjustment
   Settings : • Test point : TP2 (VT)
   • Ajustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.5V ± 0.05V.

5. LW Tracking Adjustment
   Settings : • Test point : TP-5, TP-6
   • Adjustment location :
   L941... 144kHz
   TC942 .... 290kHz
   Method : Set up TC942 to center before adjustment. The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

6. FM VT Adjustment

Settings : • Test point : TP2 (VT)
• Adjustment location : L807

Method : Set to FM 108.0MHz and adjust L807 so that the test point is 8.0V ± 0.05V.
Set to FM 87.5MHz, and adjust L807 so that the test point is more than 1.5V.

7. FM Tracking Adjustment

Settings : • Test point : TP6, TP7
• Adjustment location :
L802, L804, L831 .... 87.5 MHz
TC801, TC802, TC803 .... 108MHz

Method : • The level at 87.5MHz is adjusted by L802, L804, L831. Then the level at 108.0MHz is adjusted by TC801, TC802, TC803, so that the test point is 4 ± 6dB.

8. DC Balance / Mono Distortion Adjustment

Settings : • Test point : TP3, TP4
• Adjustment location : L741
• Input level : 54dB

Method : Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V. Next, check that the distortion is less than 1.3%.

9. Auto Stop Level Adjustment

Settings : • Test point : TP5
• Adjustment location : SFR722
• Input level : 18dB

Method : Set to FM 98.0 MHz and adjust voltage low (about 0.1V) by SFR722. After that voltage high (about 7.0V) out by 2dB down.

10. Auto Stop Level Check

MW

Settings : • Test point : TP5
• Input level :Variable

Method : Set to MW 999kHz and check that the test point is 46 ~ 66 dB.

FM

Settings : • Test point : TP5
• Input level : Variable

Method : Set to FM 98.0MHz and check that the test point is 20 dB ± 5 dB.

< DECK SECTION >

11. Tape Speed Adjustment

Settings : • Test tape : TTA-100
• Test point : TP8, TP9
• Adjustment location : SFR1

Method : Play back the test tape and adjust SFR540 so that the frequency counter reads 3000Hz ± 5Hz.

12. Head Azimuth Adjustment

Settings : • Test tape : TTA-300
• Test point : TP8, TP9
• Adjustment location : Head azimuth adjustment screw

Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD and REV PLAYmode.

13. PB Frequency Response Check (DECK 1, DECK 2)

Settings : • Test tape : TTA-300
• Test point : TP8, TP9

Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is ±4dB

14. PB Sensitivity Adjustment (DECK 1, DECK 2)

Settings : • Test tape : TTA-200
• Test point : TP8, TP9
• Adjustment location :
SFR321 (DECK 1, Lch)
SFR322 (DECK 1, Rch)
SFR311 (DECK 2, Lch)
SFR312 (DECK 2, Rch)

Method : Play back the 400Hz signals of the test tape and adjust SFRs so that the output level of the test point becomes 300mV ± 10mV .

15. REC/PB Frequency Response Adjustment

Settings : • Test tape : TTA-602
• Test point : TP8, TP9
• Input signal : 1kHz / 10kHz (LINE IN)
• Adjustment location : SFR371 (Lch)
SFR372 (Rch)

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes 17mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

16. REC/PB Frequency Responce CrO2 check

Settings : • Test tape : TTA-610
• Test point : TP8, TP9

Method : Play back the 1kHz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 1kHz signal is ±1dB

17. Bias OSC Frequency Adjustment

Settings : • Test tape : TTA-610
• Test point : TP10
• Adjustment location : L371

Method : Set to the REC mode. Adjust L371 so that the frequency counter of the test point is 85 kHz ± 1 kHz.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	EZ, K : 11dB ± 6 dB
(THD 3 %)	G : 4dB ± 6 dB
	(87.5 MHz)
	EZ, K : 9dB ± 6dB
	G :4dB ± 6dB
	(98.0 MHz)
	EZ, K : 10dB ± 6dB
	G : 5dB ± 6 dB
	(108.0MHz)
S/N 46dB Quieting sensitivity :	
	EZ : 38dB ± 6dB
	K, G : 31dB ± 6dB
	(87.5 / 98.0 / 108.0MHz)
Signal to noise ratio :	(MONO) More than 65dB (98.0MHz)
	(STEREO) More than 64dB
	EZ : (98.0MHz)
	K, G : (88.0MHz)
Distortion :	(MONO) Less than 1.8% (98.0MHz)
	(STEREO) Less than 2.0% (98.0MHz)
Stereo separation :	EZ, K : More than 22dB (98.0MHz)
	G : More than 25dB (98.0MHz)
Auto Stop level :	20dB ± 10dB (98.0MHz)
Intermediate frequency :	10.7MHz

<AM(MW) SECTION>

Sensitivity :	55 ± 6dB
(S/N 20 dB)	[at 603kHz]
	53 ± 6dB
	[at 999 / 1404kHz]
Distortion :	Less than 1.8%
	[at 999kHz]
Intermediate frequency :	450kHz

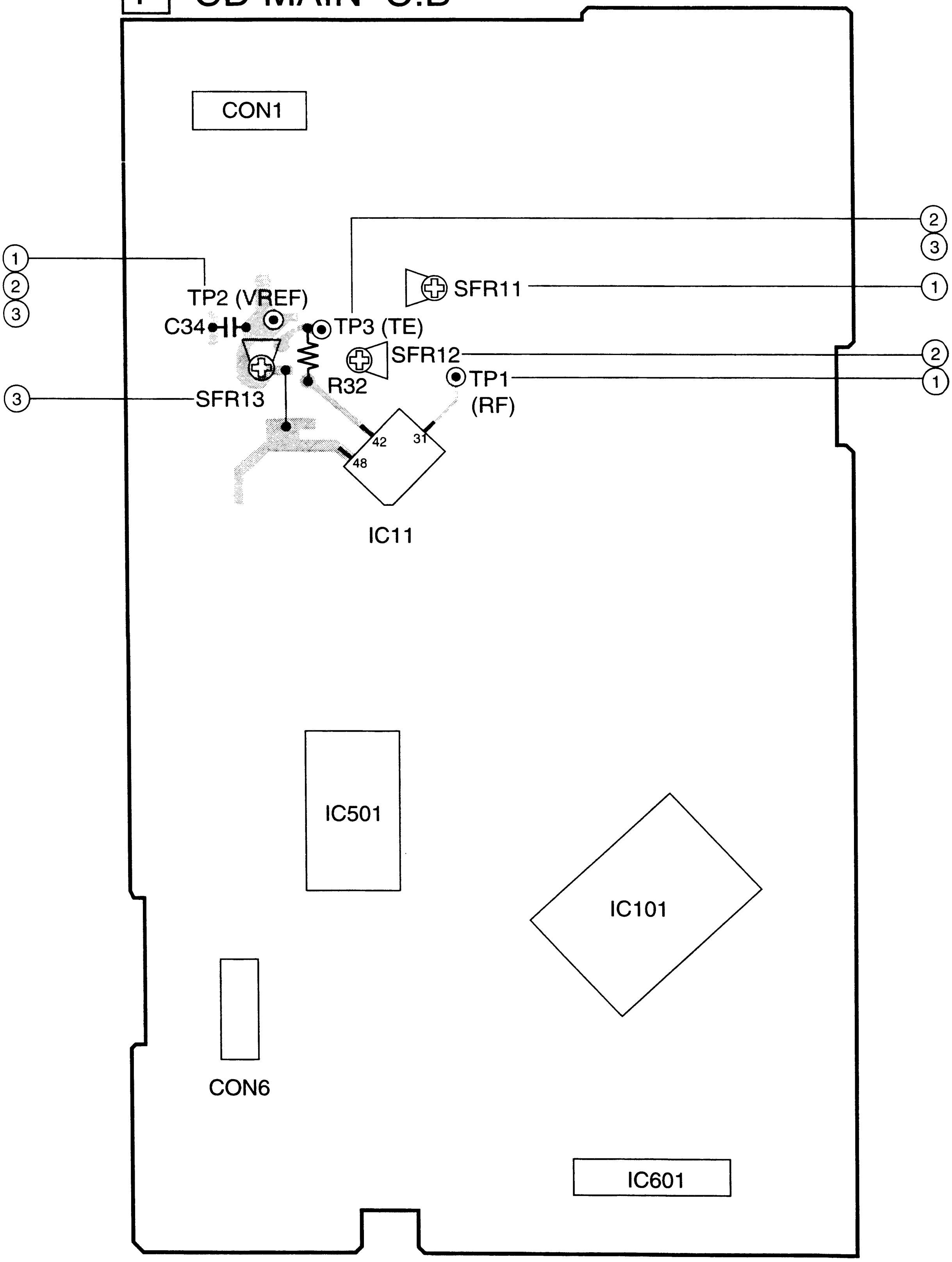
<LW SECTION>

Sensitivity :	66dB ± 5dB (144kHz)
(S/N 20dB)	63dB ± 5dB (198kHz)
	63dB ± 5dB (290kHz)
Distortion :	Less than 1.5% (198kHz)
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.35% (R.M.S)
Take-up torque :	30 ~ 60g-cm (FWD, REV)
F.F & REW torque :	55 ~ 120g-cm
Back tension :	1 ~ 4g-cm (FWD, REV)
PB Output level :	2.8V ± 3.0dB (SP OUT 2V)
REC/PB Output level :	2.0V ± 3.0dB (SP OUT 2V)
Distortion (REC/PB) :	Less than 2.0% (NORM)
Noise level (PB) :	Less than 190mV (CrO2)
	Less than 300mV (NORM)
	(DOLBY OFF LINEAR, DIN AUDIO)
Noise level (REC/PB) :	Less than 35mV / 12mV (NORM)
	Less than 23mV / 10mV (CrO2)
	(DOLBY OFF LINEAR / WTD)
Crosstalk :	More than 55dB (1kHz, 0VU)
Channel separation :	More than 40dB (1kHz, 0VU)
Erasing ratio :	More than 60dB (at 125Hz + 10VU)
Test tape :	NORMAL : TTA-602
	CrO2 : TTA-615

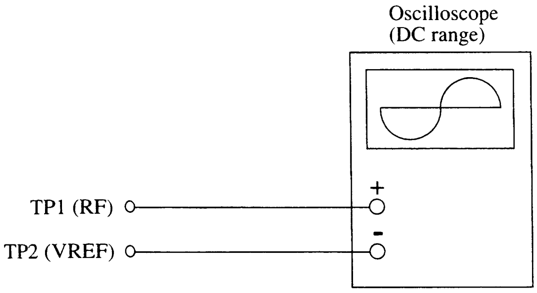
F CD MAIN C.B


CON1
①
②
③
TP2 (VREF)
C34
TP3 (TE)
SFR11
SFR12
R32
TP1
(RF)
③
SFR13
42
31
48
IC11
②
③
①
②
①
IC501
IC101
CON6
IC601

Note :
Connect a probe (10:1) of the oscilloscope or the frequency counter to a test point TP2(VREF).

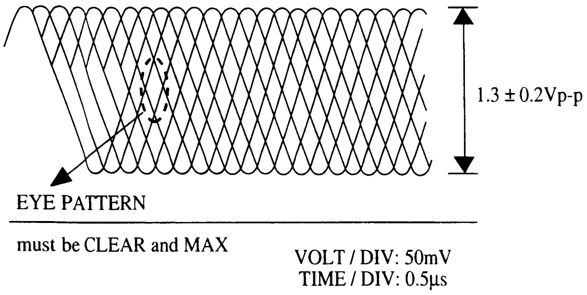
1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

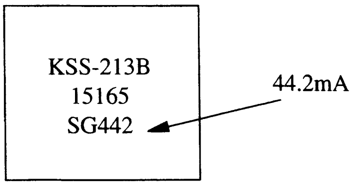

Oscilloscope
(DC range)
TP1 (RF)
TP2 (VREF)
+
-

1) Connect an oscilloscope to the test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR11 so that RF signal of the test point TP1 (RF) is MAX and CLEARREST.

RF signal waveform

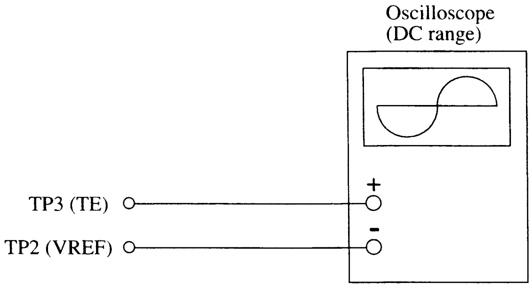

1.3 ± 0.2Vp-p
EYE PATTERN
must be CLEAR and MAX
VOLT / DIV: 50mV
TIME / DIV: 0.5μs

Note:
The current of the laser signal can be checked with the voltages on both sides of R28 (10Ω). The difference for the specified value shown on the level must be within ± 6.0mA.

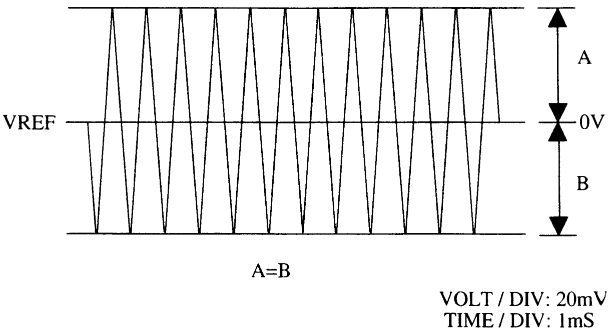

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current lop} = \frac{\text{Voltage across R28}}{10\Omega}$$

2. Tracking Balance Adjustment


Oscilloscope
(DC range)
TP3 (TE)
TP2 (VREF)
+
-

1) Connect an oscilloscope to the test points TP3 (TE) and TP2 (VREF).
2) Active the CD test mode.
3) Insert test disc TCD-782 (YEDS-18) and set the traverse mode (No.4) of CD test mode.
4) Adjust SFR12 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
5) After the adjustment is completed, remove the connected lead wires from the terminals.


A
VREF
0V
B
A=B
VOLT / DIV: 20mV
TIME / DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these gains are reciprocate, the adjustment is performed at the point where both gains are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates increases.

- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is not satisfied, the symptoms below appear.

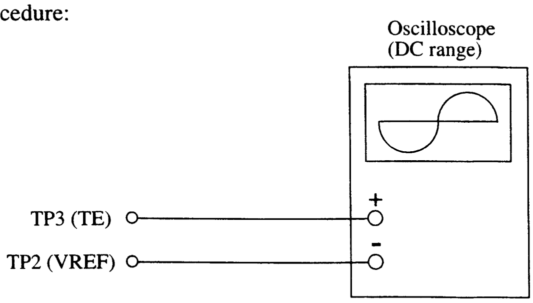
Gain Symptoms	(Focus)	Tracking
• The time until music starts becomes longer for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	–	low
• Disc stops to rotate shortly after STOP → ▶PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops.	–	low
• More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

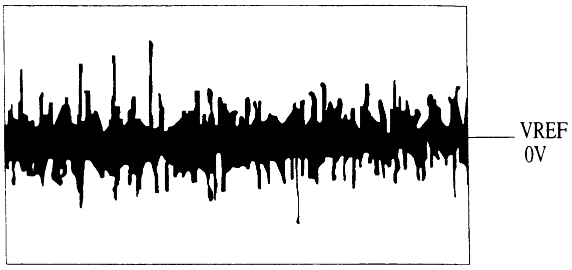
– Simple adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment.
If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



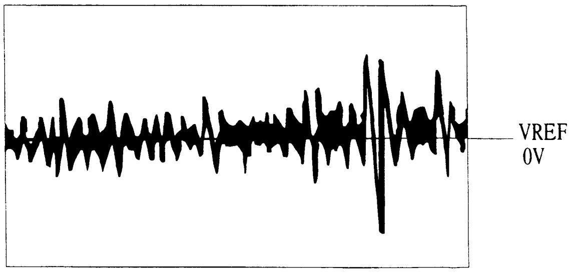
1) Keep the set horizontal. (If the set is not kept horizontally,
this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP2 (VREF) and TP3(TE).
4) Adjust SFR13 so that the waveform appears as shown in the figure below.
(tracking gain adjustment)



VOLT/DIV: 50 mV
TIME/DIV: 1 mS

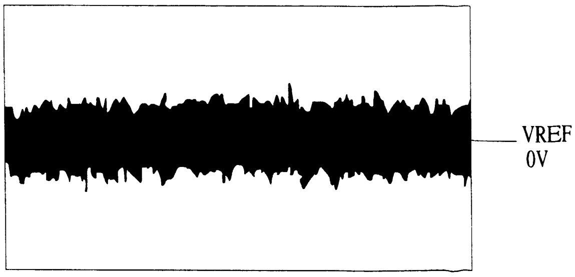
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted)



VOLT/DIV: 50 mV
TIME/DIV: 1 mS

High tracking gain
(The frequency of the fundamental wave is higher than in low gain)

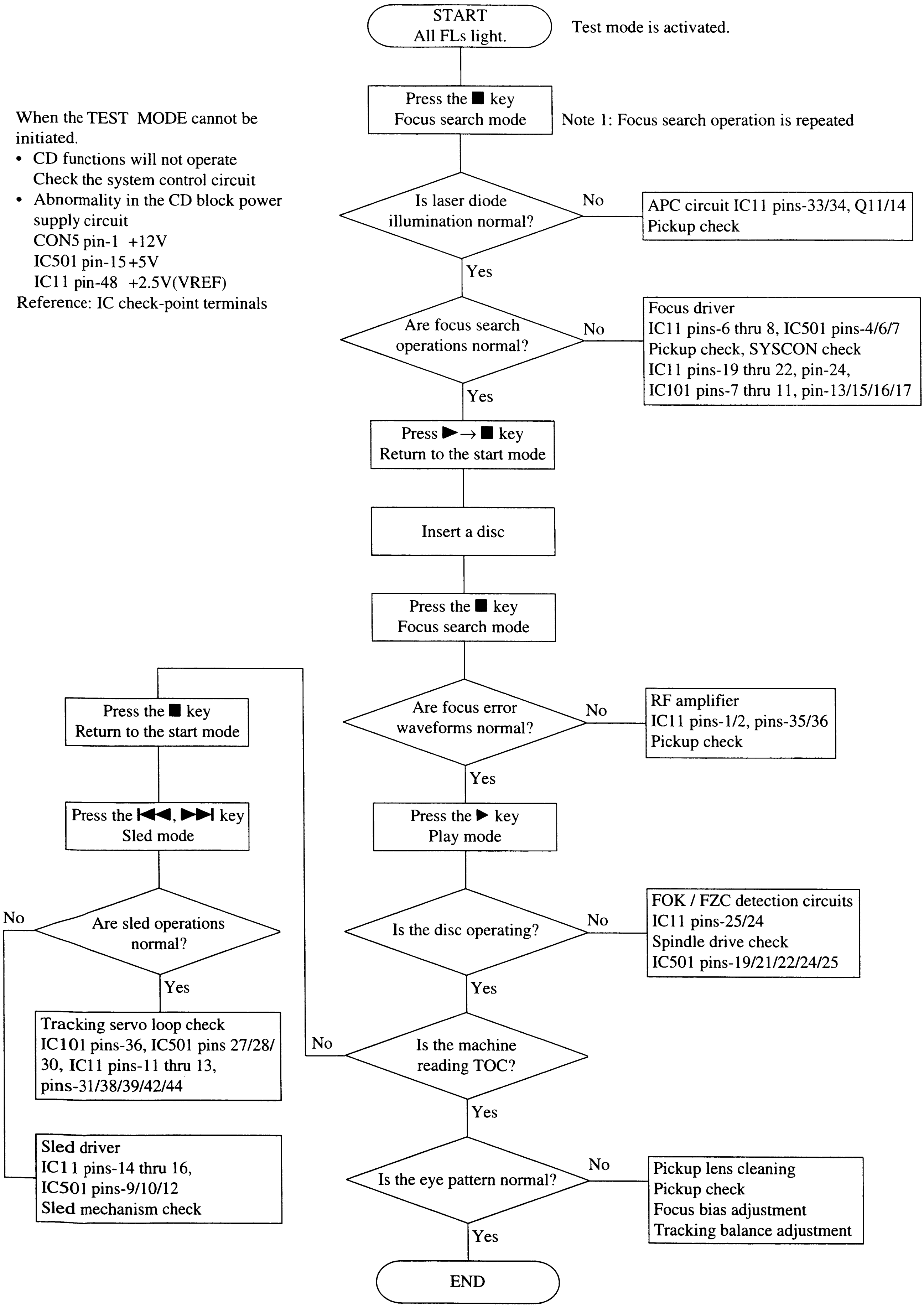


VOLT/DIV: 50 mV
TIME/DIV: 1 mS

CD TROUBLE-SHOOTING

Flow Chart

- * When the TEST MODE cannot be initiated.
  - CD functions will not operate
    Check the system control circuit
  - Abnormality in the CD block power supply circuit
    CON5 pin-1 +12V
    IC501 pin-15 +5V
    IC11 pin-48 +2.5V(VREF)
- * Reference: IC check-point terminals


START
All FLs light.
Test mode is activated.
Press the ■ key
Focus search mode
Note 1: Focus search operation is repeated
Is laser diode illumination normal?
No
APC circuit IC11 pins-33/34, Q11/14
Pickup check
Yes
Are focus search operations normal?
No
Focus driver
IC11 pins-6 thru 8, IC501 pins-4/6/7
Pickup check, SYSCON check
IC11 pins-19 thru 22, pin-24,
IC101 pins-7 thru 11, pin-13/15/16/17
Yes
Press ▶→■ key
Return to the start mode
Insert a disc
Press the ■ key
Focus search mode
Are focus error waveforms normal?
No
RF amplifier
IC11 pins-1/2, pins-35/36
Pickup check
Yes
Press the ▶ key
Play mode
Is the disc operating?
No
FOK / FZC detection circuits
IC11 pins-25/24
Spindle drive check
IC501 pins-19/21/22/24/25
Yes
Is the machine reading TOC?
No
Press the ■ key
Return to the start mode
Press the ⏮, ⏭ key
Sled mode
Are sled operations normal?
No
Sled driver
IC11 pins-14 thru 16,
IC501 pins-9/10/12
Sled mechanism check
Yes
Tracking servo loop check
IC101 pins-36, IC501 pins 27/28/30, IC11 pins-11 thru 13,
pins-31/38/39/42/44
Yes
Is the eye pattern normal?
No
Pickup lens cleaning
Pickup check
Focus bias adjustment
Tracking balance adjustment
Yes
END

TEST MODE

1. How to Activate CD Test Mode
1) Insert the AC plug while pressing the function CD button. All FL display tubes will light up, and the test mode will be activated.

2. How to cancel CD Test Mode
Either one of the following operations will cancel the CD test mode.
- Press the function button (except CD button).
- Press the power switch button.
- Disconnect the AC plug.

3. CD Test Mode Functions
When test mode is activated, the following mode functions from No. 1 to No. 5 can be used by pressing the operation keys.

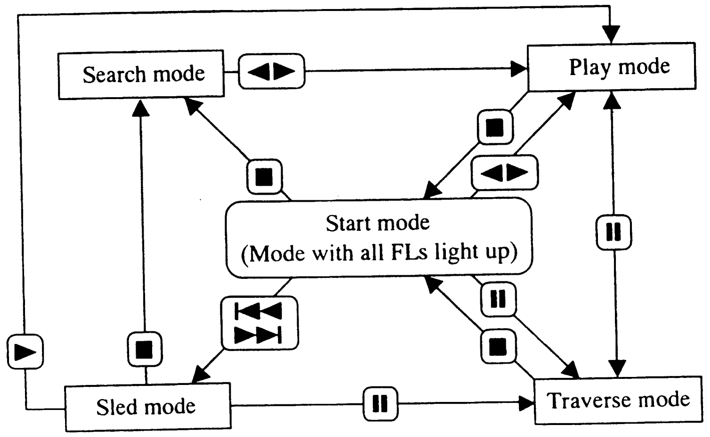
Mode / No.	Operation	FL display	Operation	Contents
Start mode No. 1	Test mode activation	All FL light up	• Active the test mode. (CD block power supply ON)	All FL displays light up
Search mode No. 2	■ key	CD--	• Laser diode illuminated under normal circumstances • Continual focus search * NOTE 1 (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes.	• Laser current measurement (Across R28 resistor) FOCUS SERVO • Check focus search waveform • Check focus error waveform * FOK / FZC are not monitored in the search mode.
Play mode No. 3	◀▶ key	C01	• Normal playback • Focus search is continued if TOC cannot be read * NOTE 1	FOCUS SERVO / TRACKING SERVO CLV SERVO / SLED SERVO Check FOK / FZC
Traverse mode No. 4	‖ key	C01	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON / OFF Tracking balance (traverse) adjustment TP2 (VREF), TP3 (TE)
Sled mode No. 5	⏮ key ⏭	All FL light up	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases, the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ‖ status is active. If they are pressed, playback will not be possible after the ‖ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ‖ status, press the ■ key and return to start mode (No. 1).

* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

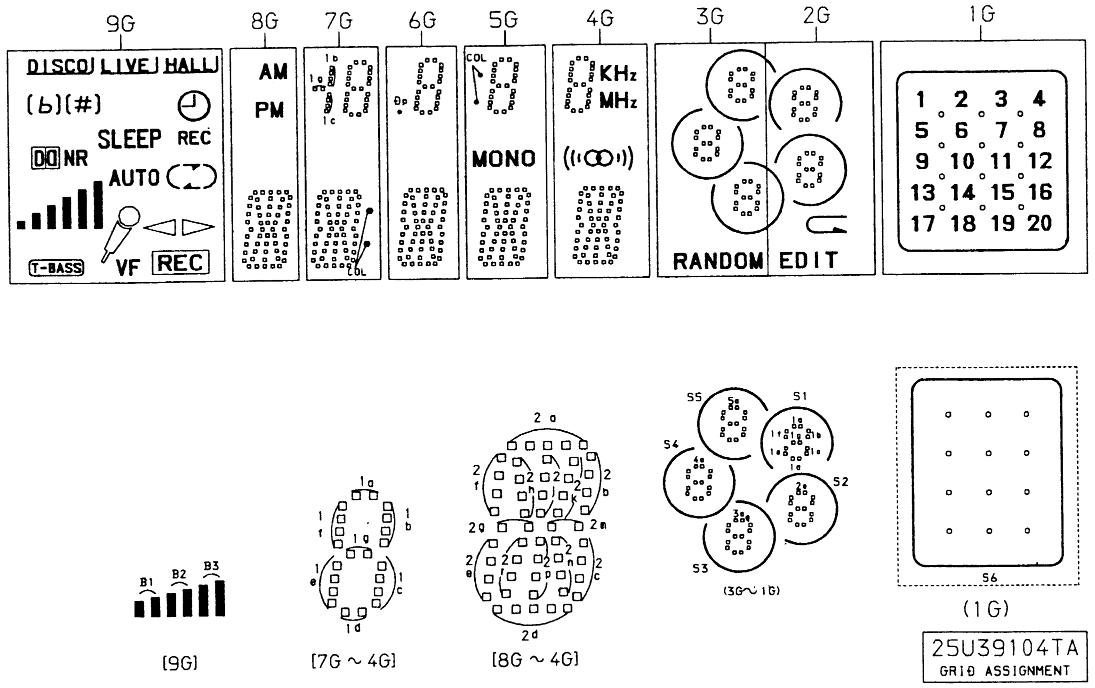
4. Operation Outline
- The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.
- When DISC DIRECT key is pressed, test mode is operated same as pressing the PLAY key.
- When CD tray is opened by OPEN / CLOSE key while play and traverse modes, test mode goes back start mode.



FL GRID ASSIGNMENT & ANODE CONNECTION

FL, 6MA5

GRID ASSIGNMENT

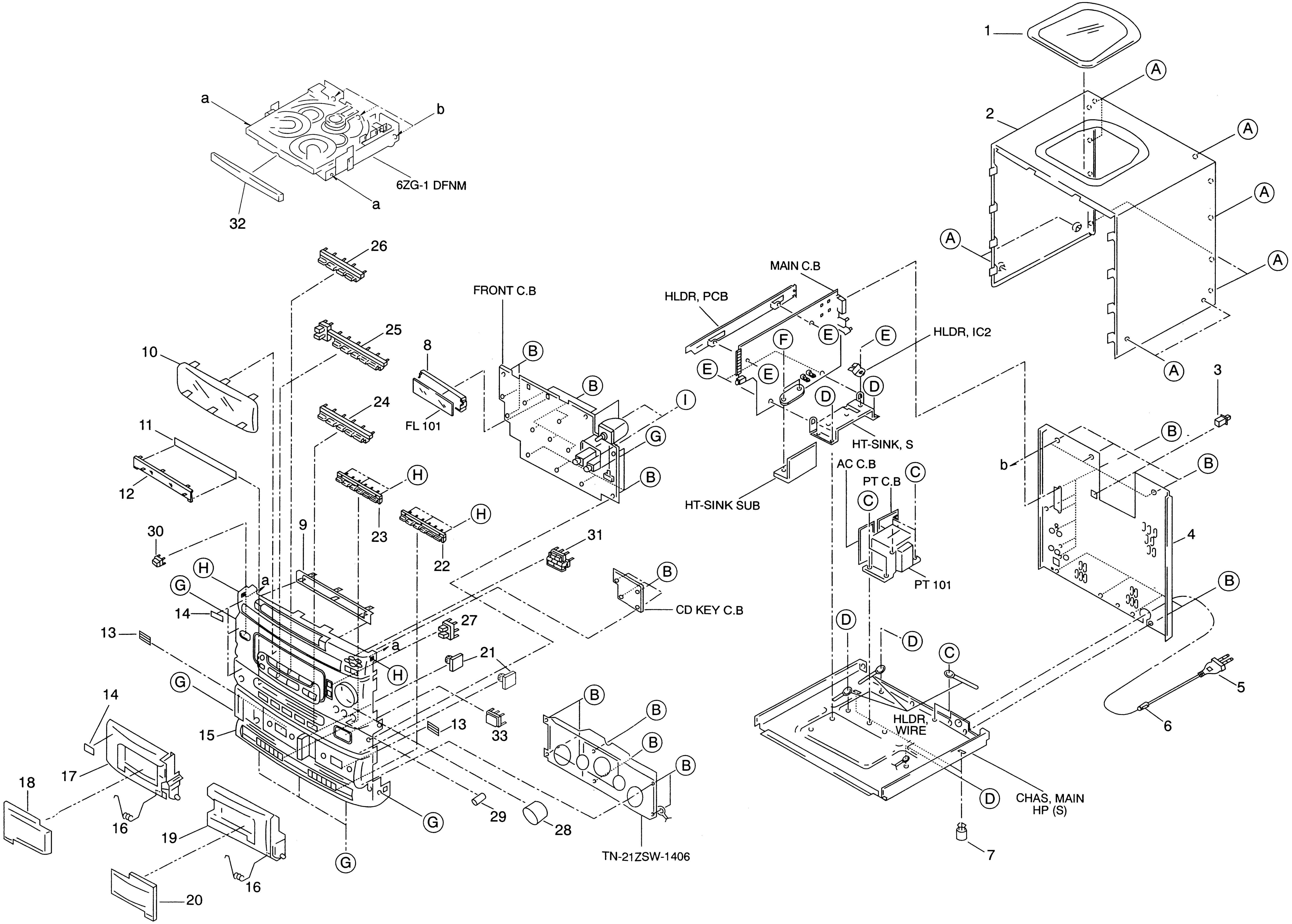


ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	T-BASS	2d	2d	2d	2d	2d	RANDOM		20
P2	VF	2j, 2p	2j, 2p	2j, 2p	2j, 2p	2j, 2p	S3		19
P3	B1	2n	2n	2n	2n	2n	3a,3d		18
P4	B2	2r	2r	2r	2r	2r	3e	EDIT	17
P5	B3	2c	2c	2c	2c	2c	3c		16
P6	AUTO	2e	2e	2e	2e	2e	3g		15
P7	DO NR	2m	2m	2m	2m	2m	3f.	↪	14
P8	SLEEP	2g	2g	2g	2g	2g	3d		13
P9	([b])	2f	2f	2f	2f	2f	4a,4d	2a,2d	12
P10	([#])	2b	2b	2b	2b	2b	4e	2e	11
P11	b ♯	2k	2k	2k	2k	2k	4c	2c	10
P12	◁	2h	2h	2h	2h	2h	4g	2g	9
P13	(	2a	2a	2a	2a	2a	4f	2f	8
P14	⇄	o	col	—	MONO	—	4b	2b	7
P15	)		g	—	col (LOWER)	(((∞)))		1a,1d	6
P16	REC		b, c	Ðp	col (UPPER)	MHz		1e	5
P17	▷		—	—	—	KHz		1c	4
P18	REC	PM	1d	1d	1d	1d	S4	S2	
P19	🕘	—	1e	1e	1e	1e	5a,5d	1g	3
P20	[ÐISCO]	—	1c	1c	1c	1c	5e	1f	2
P21	[LIVE]	AM	1g	1g	1g	1g	5c		1
P22	[HALL]		1f	1f	1f	1f	5g	1b	S6
P23	DISCO LIVE HALL		1b	1b	1b	1b	5f	S1	
P24	—	—	1a	1a	1a	1a	5b		—
P25	—	—	—	—	—	—	S5		—

25U39104TA
ANOÐE CONNECTION

MECHANICAL EXPLODED VIEW 1/1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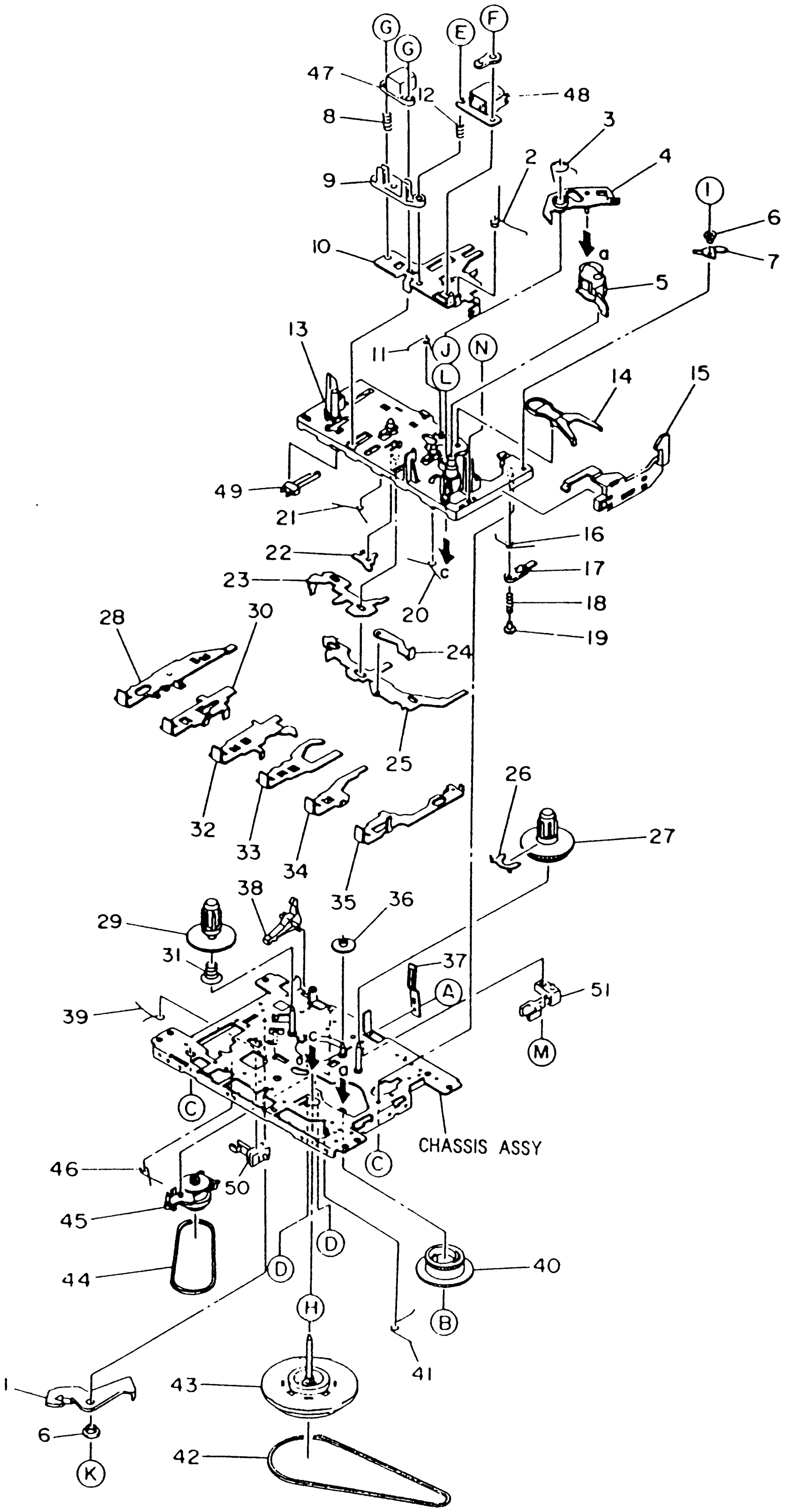
MECHANICAL PARTS LIST 1/1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MA3-042-019		WINDOW,TOP
2	86-MA5-014-019		CABI,STEEL
3	84-ZG1-245-119		CAP,OPTICAL
4	86-MA6-013-019		PANEL,REAR GBNM<G>
4	86-MA6-015-019		PANEL,REAR EZBNM<EZ>
4	86-MA6-017-019		PANEL,REAR KBNM<K>
⚠ 5	87-050-079-019		AC CORD ASSY,E<EZ>
⚠ 5	87-A80-007-119		AC CORD ASSY,K PLK<K>
⚠ 5	87-050-081-119		AC CORD ASSY,G<G>
6	87-085-185-010		BUSHING,AC CORD E
7	87-085-224-019		FOOT,H17
8	82-NF7-210-019		GUIDE,FL
9	86-MA5-005-119		WINDOW,CD
10	86-MA6-052-019		WINDOW,AMP
11	86-MA5-020-019		PLATE,GEQ
12	86-MA5-007-019		WINDOW,GEQ
13	81-532-080-019		LBL,CASS-COMPT
14	82-NE8-032-019		BADGE,AIWA 27.5
15	86-MA6-003-019		CABI,FR E
16	85-MA7-201-019		SPR-T,EJECT
17	86-MA6-032-019		BOX,CASS LE
18	86-MA6-050-019		WINDOW,CASS L
19	86-MA6-033-019		BOX,CASS RE
20	86-MA6-051-019		WINDOW,CASS R
21	87-063-164-019		OIL DMPR 80
22	86-MA6-065-019		KEY,CASS 2
23	86-MA6-064-019		KEY,CASS 1
24	86-MA5-017-019		KEY,GEQ
25	86-MA6-063-019		KEY,PLAY
26	86-MA6-062-019		KEY,FUN
27	86-MA5-015-019		KEY,T-BASS
28	86-MA6-070-019		KNOB,VOL
29	80-MT3-014-019		KNOB, MIC
30	86-MA5-012-019		KEY,POWER
31	86-MA5-010-019		KEY,DIRECT
32	86-MA5-037-019		PANEL,TRAY E
33	86-MA5-018-019		KEY,ASP
A	87-067-641-019		UTT2+3-8 W/O SLOT BLK
B	87-067-703-019		BVT2+3-10 (W/O SLOT)
C	87-067-585-019		BVTT+4-6
D	87-067-688-019		BVTT+3-6
E	87-067-579-019		BVT2+3-8 W/O SLOT
F	87-067-698-019		BVT2+3-18
G	87-591-094-419		QIT+3-6 GOLD
H	87-067-758-019		BVT2+3-12(W/O SLOT)
I	81-MK1-210-019		S-SCREW BFT2+3-16

TAPE MECHANISM EXPLODED VIEW 1/2



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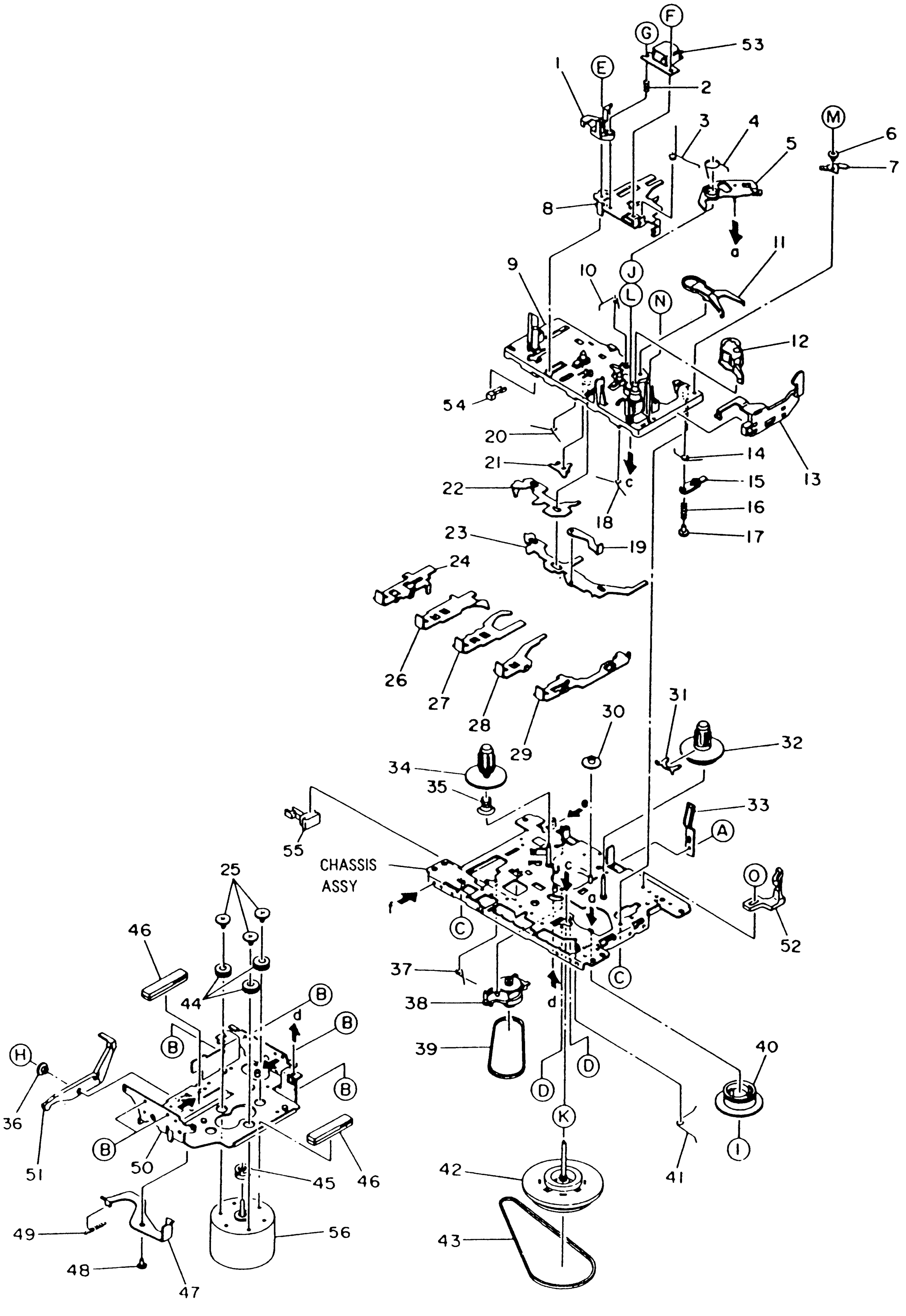
TAPE MECHANISM PARTS LIST 1/2

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-020-010		REC ARM
2	S1-921-030-090		PANEL P SPRING
3	S1-921-260-050		GEAR PLATE SPRING
4	S1-921-265-020		GEAR PLATE ASSY
5	S1-921-043-100		PINCH ROLLER ARM ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-821-030-080		EH SPRING
9	S1-921-030-060		HEAD BASE
10	S1-921-030-140		HEAD PANEL
11	S1-921-141-8A0		M CONTROL SPRING
12	S1-821-030-070		AZIMUTH SPRING
13	S1-921-143-180		BASE ASSY
14	S1-921-260-4A0		SENSING LEVER
15	S1-921-130-020		EJECT SLIDE LEVER
16	S1-921-141-3A0		P CONTROL SPRING
17	S1-921-140-550		PAUSE LEVER(E)
18	S1-921-140-120		PAUSE LEVER SPRING
19	S1-921-140-110		PAUSE STOPPER
20	S1-921-140-150		BUTTON LEVER SPRING(B)
21	S1-921-140-140		BUTTON LEVER SPRING(A)
22	S1-921-140-200		PR STOPPER
23	S1-921-140-090		SWITCH ACTUATOR
24	S1-921-140-640		E KICK LEVER
25	S1-921-140-080		PUSH BUTTON ACTUATOR
26	S1-921-050-060		SENSER
27	S1-921-053-030		TAKE UP REEL ASSY
28	S1-921-140-220		REC BUTTON LEVER
29	S1-921-053-040		SUPPLY REEL ASSY
30	S1-921-140-230		PLAY BUTTON LEVER
31	S1-821-100-990		BACK TENSION SPRING
32	S1-921-140-240		REW BUTTON LEVER
33	S1-921-140-250		FF BUTTON LEVER
34	S1-921-140-660		STOP BUTTON LEVER
35	S1-921-140-610		PAUSE BUTTON LEVER
36	S1-821-100-700		FF GEAR
37	S1-829-100-010		PACK SPRING
38	S1-821-100-690		RECORD SAFETY LEVER
39	S1-921-140-210		REC BUTTON LEVER SPRING
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-090-240		MAIN BELT
43	S1-921-093-030		FLYWHEEL ASSY
44	S1-821-070-110		RF BELT
45	S1-921-073-040		RF CLUTCH ASSY
46	S1-921-140-170		P.S.LEVER SPRING
47	S6-202-140-190		E HEAD
48	S6-201-010-750		R.P.HEAD RP-7442BS
49	S6-401-011-490		LEAF SW MSW-1541T
50	S6-401-011-610		LEAF SW MSW-17820MVEI
51	S6-401-010-380		LEAF SW MSW-1275
A	S9-179-000-000		C TAP SCREW M2-3
B	S9-422-000-000		P WASHER CUT 12-3.8-0.3
C	S9-679-000-000		P TAP SCREW M2-5
D	S9-999-180-090		TAP SCREW M2-4.5
E	S9-922-000-000		AZIMUTH SCREW M2-8
F	S9-115-000-000		+ BIND SCREW M2-3
G	S9-223-000-000		SCREW,M2-7.5
H	S9-882-000-000		P WASHER 2-3.5-0.4
I	S9-999-200-410		P TAP SCREW M2-3
J	S9-999-030-130		P WASHER CUT 1.45-3.8-0.
K	S9-180-000-000		C TAP SCREW M2-4
L	S9-999-000-030		P WASHER2.1-4-0.13
M	S9-181-000-000		C TAP SCREW M2-5
N	S9-P05-200-610		S TAPPING SCREW M2-6

TAPE MECHANISM EXPLODED VIEW 2/2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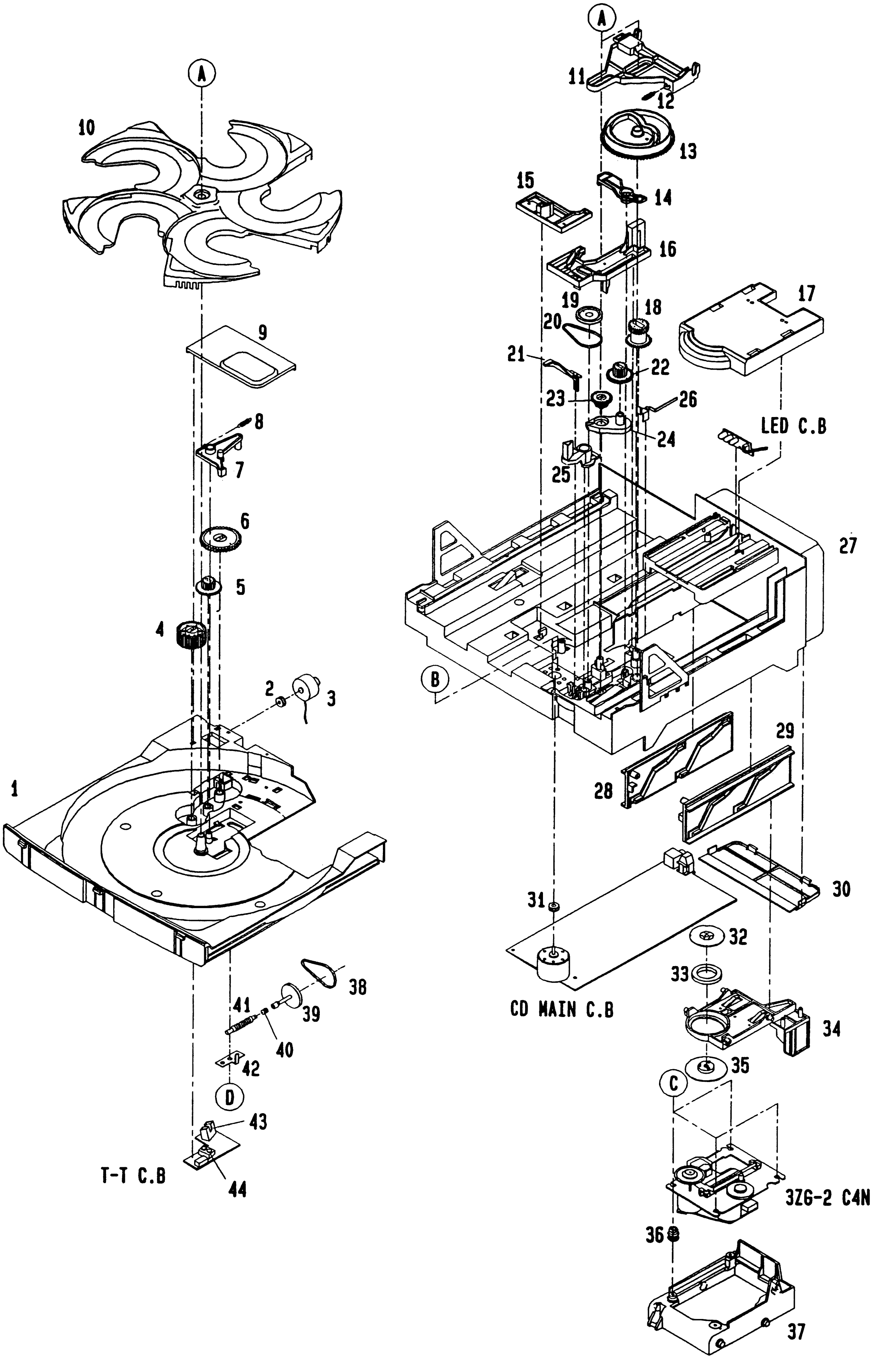
TAPE MECHANISM PARTS LIST 2/2

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-4A0		HEAD BASE
2	S1-821-030-070		AZIMUTH SPRING
3	S1-921-030-090		PANEL P SPRING
4	S1-921-260-050		GEAR PLATE SPRING
5	S1-921-265-020		GEAR PLATE ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-110		HEAD PANEL
9	S1-921-143-100		BASE ASSY
10	S1-921-141-8A0		M CONTROL SPRING
11	S1-921-260-4A0		SENSING LEVER
12	S1-921-043-100		PINCH ROLLER ARM ASSY
13	S1-921-130-020		EJECT SLIDE LEVER
14	S1-921-141-3A0		P CONTROL SPRING
15	S1-921-140-550		PAUSE LEVER(E)
16	S1-921-140-120		PAUSE LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER
18	S1-921-140-150		BUTTON LEVER SPRING(B)
19	S1-821-011-590		E KICK LEVER
20	S1-921-140-140		BUTTON LEVER SPRING(A)
21	S1-921-140-200		PR STOPPER
22	S1-921-140-090		SWITCH ACTUATOR
23	S1-921-140-080		PUSH BUTTON ACTUATOR
24	S1-921-140-230		PLAY BUTTON LEVER
25	S1-821-120-020		MOTOR COLLER SCREW
26	S1-921-140-240		REW BUTTON LEVER
27	S1-921-140-250		FF BUTTON LEVER
28	S1-921-140-260		STOP BUTTON LEVER
29	S1-921-140-610		PAUSE BUTTON LEVER
30	S1-821-100-700		FF GEAR
31	S1-921-050-060		SENSER
32	S1-921-053-030		TAKE UP REEL ASSY
33	S1-829-100-010		PACK SPRING
34	S1-921-053-040		SUPPLY REEL ASSY
35	S1-821-100-990		BACK TENSION SPRING

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
36	S1-821-120-650		COLLER B
37	S1-921-140-170		P.S.LEVER SPRING
38	S1-921-073-040		RF CLUTCH ASSY
39	S1-821-070-110		RF BELT
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-093-040		FLYWHEEL ASSY
43	S1-921-090-240		MAIN BELT
44	S1-820-130-060		MOTOR RUBBER
45	S1-921-120-130		MOTOR PULLEY
46	S1-921-120-120		ANTI VIBR FELT MAT
47	S1-821-120-680		P KICK LEVER (A)
48	S1-821-120-230		PK COLLER SCREW A
49	S1-821-120-250		P KICK LEVER SPRING
50	S1-921-120-110		MOTOR BRACKET
51	S1-921-120-090		P KICK LEVER
52	S6-401-011-250		LEAF SW MSW-1664
53	S6-201-010-750		R.P.HEAD RP-7442BS
54	S6-401-011-490		LEAF SW MSW-1541T
55	S6-401-011-610		LEAF SW MSW-17820MVEI
56	S6-002-030-290		MOTOR EG530YD-2BH
A	S9-179-000-000		C TAP SCREW M2-3
B	S9-180-000-000		C TAP SCREW M2-4
C	S9-679-000-000		P TAP SCREW M2-5
D	S9-999-180-090		TAP SCREW M2-4.5
E	S9-004-000-000		SCREW M2-6
F	S9-115-000-000		+ BIND SCREW M2-3
G	S9-922-000-000		AZIMUTH SCREW M2-8
H	S9-182-000-000		C TAP SCREW M2-6
I	S9-422-000-000		P WASHER CUT 12-3.8-0.3
J	S9-999-030-130		P WASHER CUT 1.45-3.8-0.
K	S9-882-000-000		P WASHER 2-3.5-0.4
L	S9-999-000-030		P WASHER2.1-4-0.13
M	S9-999-200-410		P TAP SCREW M2-3
N	S9-P05-200-610		S TAPPING SCREW M2-6
O	S9-661-000-000		CAP TAP SCREW M2-5

CD MECHANISM EXPLODED VIEW 1/2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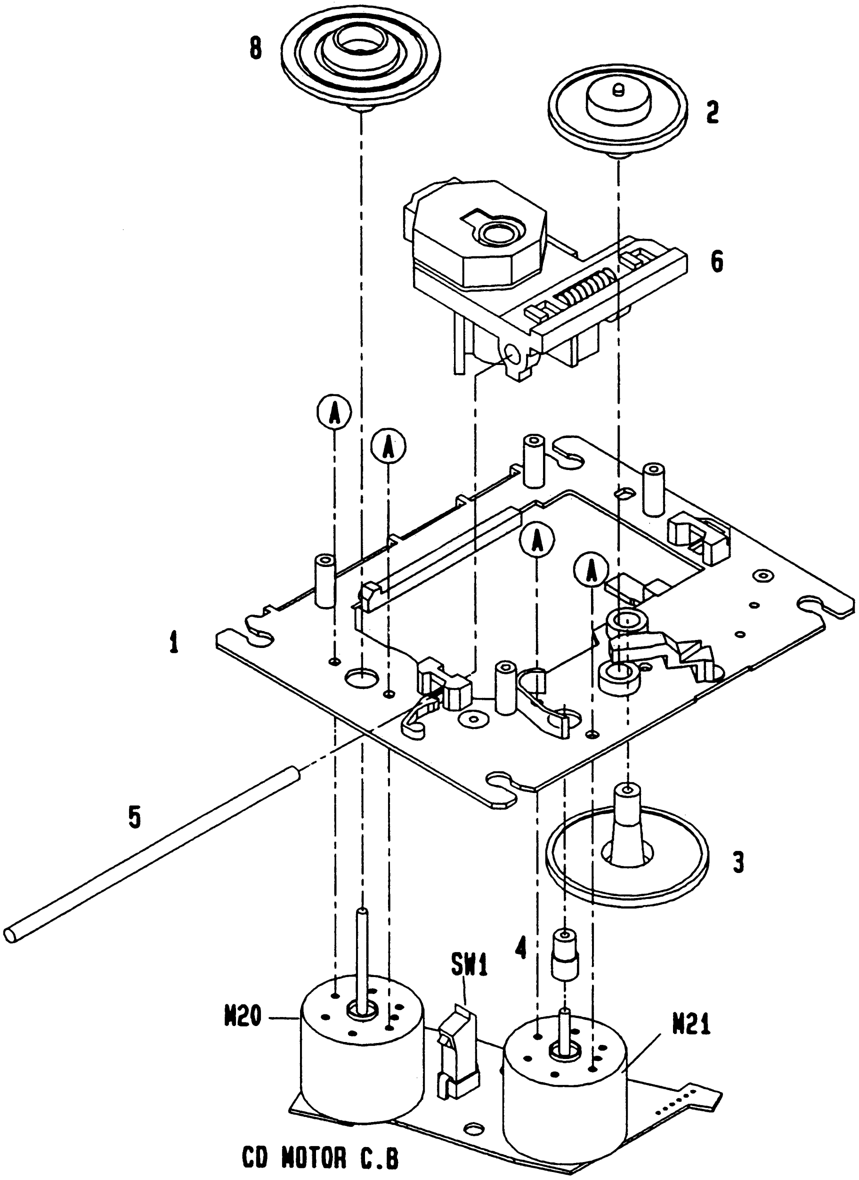
CD MECHANISM PARTS LIST 1 / 2

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZG1-001-01K		TRAY,5CD
2	81-ZG1-212-01K		PULLY,LOAD MO(*)
3	87-A90-036-019		MOT ASSY,RF-300CA-11
4	86-ZG1-228-01K		GEAR,TT-B
5	86-ZG1-227-01K		GEAR,TT-A
6	86-ZG1-223-01K		WORM-WHEEL,TT
7	86-ZG1-224-01K		LEVER,TT
8	86-ZG1-226-010		SPR-E,LEVER TT
9	86-ZG1-003-01K		COVER,TRAY
10	86-ZG1-002-01K		TURN TABLE,5CD
11	86-ZG1-211-01K		JOINT,CAM
12	86-ZG1-216-010		SPR-E,JT
13	86-ZG1-203-01K		GEAR,MAIN CAM
14	86-ZG1-213-01K		LEVER,LOAD
15	86-ZG1-214-01K		LEVER,PROTECT
16	86-ZG1-212-01K		SLIDER,LOAD
17	86-ZG1-004-01K		REFLECTOR,CD
18	86-ZG1-205-01K		GEAR,TRAY
19	84-ZG1-219-019		PULLY,RELAY BGE
20	84-ZG1-209-010		BELT,SQ1.8-117.7
21	86-ZG1-217-01K		LEVER,SW
22	86-ZG1-206-01K		GEAR,RELAY B
23	86-ZG1-204-01K		GEAR,RELAY A
24	86-ZG1-218-01K		PLATE,GEAR
25	86-ZG1-208-01K		LEVER,TRAY
26	86-ZG1-220-110		SPR-P,LOCK
27	86-ZG1-201-01K		CHAS,MECHA
28	86-ZG1-209-01K		SLIDER,CAM L
29	86-ZG1-210-01K		SLIDER,CAM R
30	86-ZG1-005-01K		COVER,CHAS
31	84-ZG2-228-019		PULLEY,MOT
32	83-ZG3-211-01K		PLATE,DISC
33	83-ZG3-602-010		RING,MAG
34	86-ZG1-215-01K		HLDR,CHUCK
35	83-ZG3-212-019		CAP,DISC
36	80-CD3-214-019		CUSH CD A
37	86-ZG1-202-01K		HLDR,MECHA
38	86-ZG1-225-019		BELT,SQ1.2-32.9
39	86-ZG1-221-01K		PULLEY,TT
40	86-ZG1-231-010		SPR-C,WORM
41	84-ZG1-238-01K		GEAR,WORM N
42	86-ZG1-232-010		SPR-P,WORM
43	86-ZG1-229-010		HLDR,SENSOR
44	86-ZG1-230-010		HLDR,DISC SENSOR
A	87-078-148-019		VFT 2+3-12(F10)BLK
B	87-251-072-419		U+2.6-5
C	81-ZG1-254-019		S-SCEW,MECH HLDR
D	87-067-579-010		BVT2+3-8 W/O SLOT

CD MECHANISM   EXPLODED VIEW 2 / 2



CD MECHANISM   PARTS LIST 2 / 2

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-232-11K		O-SERT S ASSY,S5
2	83-ZG2-204-419		GEAR,A
3	83-ZG2-205-219		GEAR,B
4	83-ZG2-220-01K		GEAR MOTOR 2
5	83-ZG2-207-119		SHAFT,SLIDE
6	87-070-445-010		PICK-UP,KSS-213B
8	83-ZG2-227-01K		TURN TABLE,C1
A	87-261-032-219		SCREW V+2-3

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

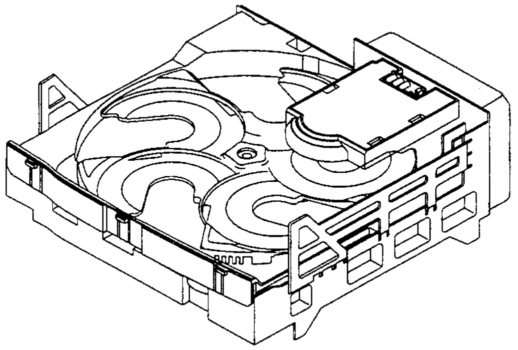
MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

aiwa

aiwa SERVICE

6ZG-1
6ZG-1S
6ZG-1S1
6ZG-1VZ



CD MECHANISM

- BASIC CD MECHANISM: 3ZG-2 C4N/C6N
- TYPE: English,Japanese

SERVICE MANUAL

BASIC NAME		DERIVATION NAME					
6ZG-1	*1	D	F	–	–	–	–
	*2	D	F	G	–	V1	V2
	*3	D	F	–	P	V1	–
6ZG-1S		D	F	–	–	–	–
6ZG-1S1		D	F	–	–	–	–
6ZG-1VZ		D	F	–	–	–	–

- ■ This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.
- ■ 本体マニュアルはBASIC CD MECHANISMのサフィックがDERIVATION NAMEです。組み合わせて使用して下さい。

S/M Code No. 09-975-198-00T

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製品を安全に修理(補修)するために

修理の前に「製品を安全に修理(補修)するために」をよくお読みの上、正しく修理を行ってください。このサービスマニュアルでは、お客様が製品を安全に正しくお使いいただき、お客様や他の人々への危害や財産への損害を未然に防止するために、修理する場合必ず下記の項目をお守りください。

⚠注意

この表示を無視して、誤った取り扱いをすると、人が傷害を負ったり物的損害が発生する可能性があります。

1.注意事項を守ること。
サービスの時、特に注意を要する箇所については、キャビネット、シャーシ、部品などにラベルや捺印で注意事項を表示しています。これらの注意書きおよび取扱説明書等の注意事項を必ずお守りください。

2.スペック銘板・注意ラベル・ヒューズラベル等の表示文字を汚して読みにくくしないこと。

3.基板パターンの裏付け部品の修理等を行う場合、パターンや部品にボンド(KE-3490)を塗布してプリント基板にしっかり固定すること。

4.サービス後は安全点検すること。
サービスのために取り外したネジ、部品、配線がもとどおりになっているか、サービスした個所の周辺で劣化させてしまったところがないかなどを点検してください。(ワイヤー半田付け、引き回し、束線、種類、空間距離)

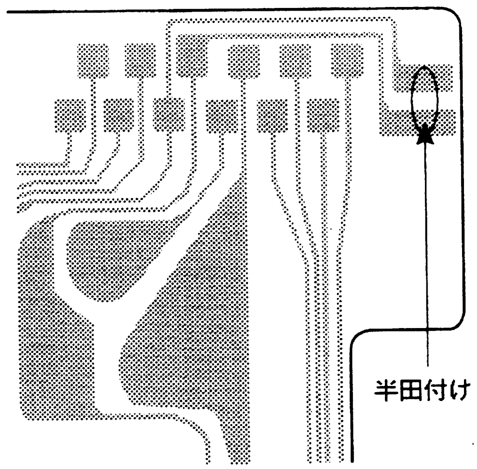
5.修理(補修)時に、レーザー出力部に接近しないこと。
やむなく接近する場合は、目を閉じてください。レーザービームに接近することが必要になった場合、光学ピックアップブロックの対物レンズの表面から30cm以上離れていることを確認してください。

光学ブロック (KSS-213B) 交換時の注意

光学系ブロック内のレーザーダイオードは、衣服や人体に帯電した静電荷等で電位差を生じることにより、静電破壊することがあります。人体アース、作業台のアースをとり、衣服が触れぬよう注意して下さい。

1) コネクターを接続後、右図に示すハンダ付けを取り除いて下さい。

PICK-UP Assy P.C.B



PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstâling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstâling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

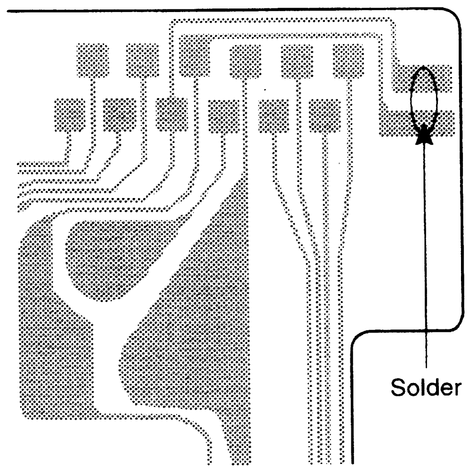
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block (KSS-213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



本体のマニュアルのBASIC CD MECHANISMのサフィックスがDERIVATION NAMEです。本サービスマニュアルは、DERIVATION NAMEを組み合わせて使用して下さい。

BASIC CD MECHANISM: 6ZG-1 DF
SUFFIX
(DERIVATION NAME)

BASIC NAME: 6ZG-1 (ORIGINAL MODEL)
6ZG-1S (SONY IC HIGH END MODEL)
6ZG-1S1 (SONY IC LOW END MODEL)
6ZG-1VZ (SANYO IC MODEL)

BASIC NAME		DERIVATION NAME					
6ZG-1	*1	D	F	—	—	—	—
	*2	D	F	G	—	V1	V2
	*3	D	F	—	P	V1	—
6ZG-1S		D	F	—	—	—	—
6ZG-1S1		D	F	—	—	—	—
6ZG-1VZ		D	F	—	—	—	—

NOTE: ・*1、*2、*3は、BASIC NAMEは同じですが、基板構成が異なります。

BOARD NAME / BASIC NAME		CD MAIN	LED C.B	T-T C.B	CD MOTOR C.B	VCD MAIN C.B	VIDEO SW C.B
6ZG-1	*1	○	○	○	○	—	—
	*2	—	○	○	○	○	○
	*3	—	○	○	○	○	—
6ZG-1S/S1		○	○	○	○	—	—
6ZG-1VZ		—	○	○	○	○	○

NOTE: ・*2と*3は、使用している基板が異なります。本マニュアルでは*2を「V1」「V2」、*3を「V1P」と表記します。

DERIVATION NAME

G:	Supporting the CD graphic feature
D:	Digital output function
F:	CD WINDOW Flash function (LED: AMBER/GREEN)
P:	Audio out pin jack type
V1:	Supporting the video CD function
V2:	Supporting the video CD function

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 6ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 6ZG-1 DF
SUFFIX
(DERIVATION NAME)

BASIC NAME: 6ZG-1 (ORIGINAL MODEL)
6ZG-1S (SONY IC HIGH END MODEL)
6ZG-1S1 (SONY IC LOW END MODEL)
6ZG-1VZ (SANYO IC MODEL)

BASIC NAME		DERIVATION NAME					
6ZG-1	*1	D	F	—	—	—	—
	*2	D	F	G	—	V1	V2
	*3	D	F	—	P	V1	—
6ZG-1S		D	F	—	—	—	—
6ZG-1S1		D	F	—	—	—	—
6ZG-1VZ		D	F	—	—	—	—

NOTE: ・*1 and *2, *3 have the same BASIC NAME but the board structures are different.

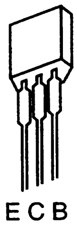
BOARD NAME / BASIC NAME		CD MAIN	LED C.B	T-T C.B	CD MOTOR C.B	VCD MAIN C.B	VIDEO SW C.B
6ZG-1	*1	○	○	○	○	—	—
	*2	—	○	○	○	○	○
	*3	—	○	○	○	○	—
6ZG-1S/S1		○	○	○	○	—	—
6ZG-1VZ		—	○	○	○	○	○

NOTE: ・The boards having the asterisk mark *2 and *3 use the different boards.
These circuit boards are identified the *2 boards as "V1", "V2" while the *3 board as "V1P" in this manual.

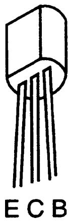
DERIVATION NAME

G:	Supporting the CD graphic feature
D:	Digital output function
F:	CD WINDOW Flash function (LED: AMBER/GREEN)
P:	Audio out pin jack type
V1:	Supporting the video CD function
V2:	Supporting the video CD function

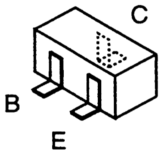
TRANSISTOR ILLUSTRATION



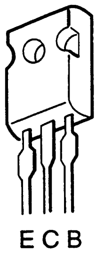
2SA933S



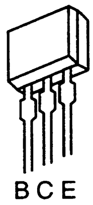
2SA1015
2SC1815
2SC2001
2SD2172
2SD655
CSD655



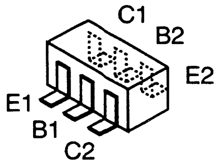
2SA1037 S
2SA1162
2SA1362
2SC2712
2SC3326
DTA114TK
DTA123JK
DTA144EK
DTC114EK
DTC114TK
DTC124XK
DTC143TK



2SA1357



2SB1329


C1
B2
E2
E1
B1
C2

HN1A01F
HN1C01F
HN1C03FB

DISASSEMBLY INSTRUCTIONS

1. ピックアップの交換方法

1) TRAYをオープンさせる。
   stopperを矢印の方向へ押し、SHAFT SLED半分だけ抜く。
2) GEAR MAIN CAMを反時計方向 (“a” の方向) に回し、Fig-1のようにCDメカを持ち上げる。
3) SHAFT SLEDを抜く。
4) CDメカを下げてPICK UPを交換する。
5) CDメカをFig-1のように上げて、SHAFT SLEDを取り付ける。

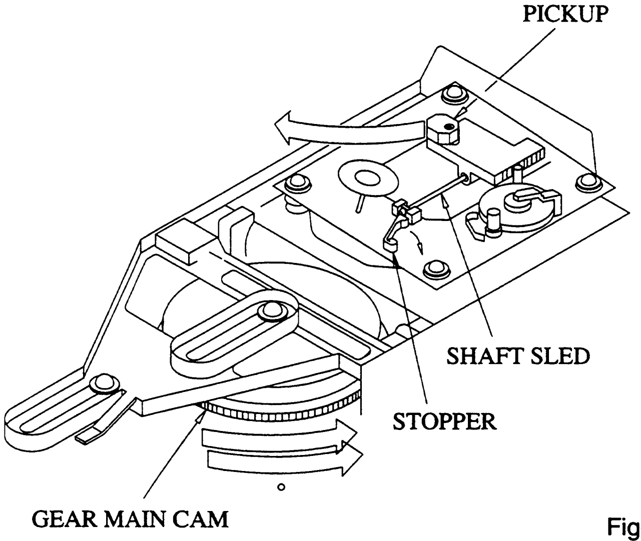

PICKUP
SHAFT SLED
STOPPER
GEAR MAIN CAM

Fig-1

2. 5巻チェンジャーブロックの外し方 (Fig-2)

1) CD基板のFFC 2本を外し、ビス5本を外す。
2) 5巻チェンジャーブロックを後から持ち上げて外す。(PANEL TRAYを外さなくても、5チェンジャーブロックを後から外すことができる。)

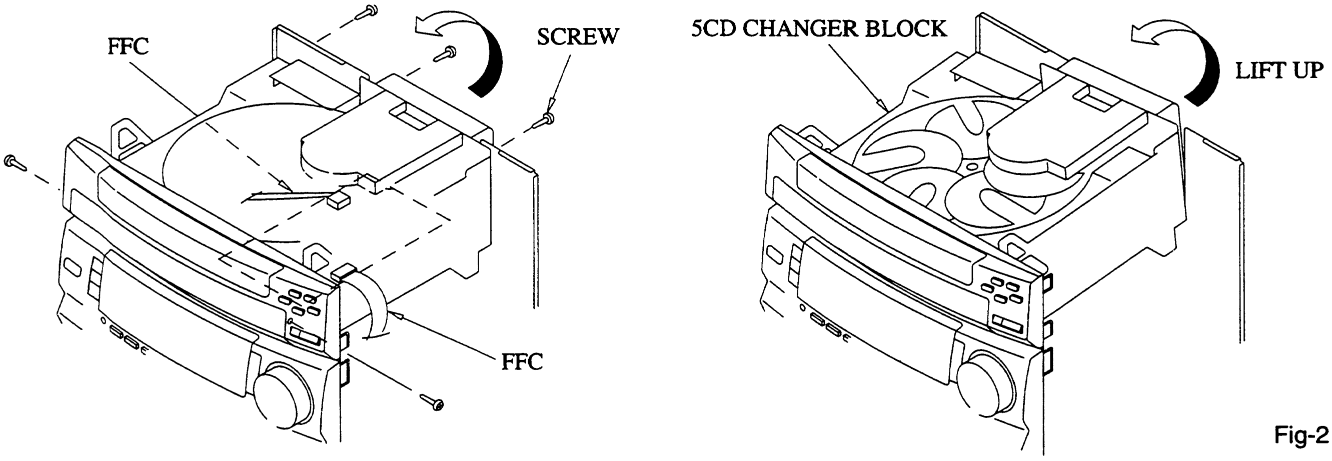

FFC
SCREW
FFC
5CD CHANGER BLOCK
LIFT UP

Fig-2

3. TRAYの分解　組立て方法

3-1. 分解方法

1) CHAS MECHA (部のPLATE GEARのボスを外側 (矢印 “b” 方向) に強く押す。(Fig-3)
(TRAYが少しせり出すのを確認する)
2) TRAYをオープン位置まで引き出す。
3) FFC を抜き、両サイドのCHAS MECHツメ (2ケ所) を押してTRAYを外す。(Fig-4)

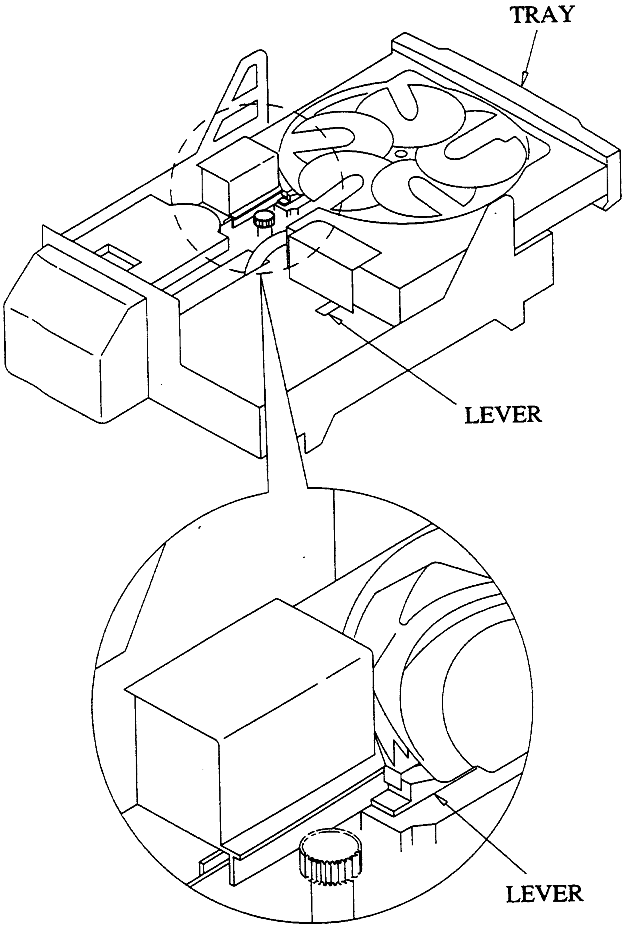

TRAY
LEVER
LEVER

Fig-4

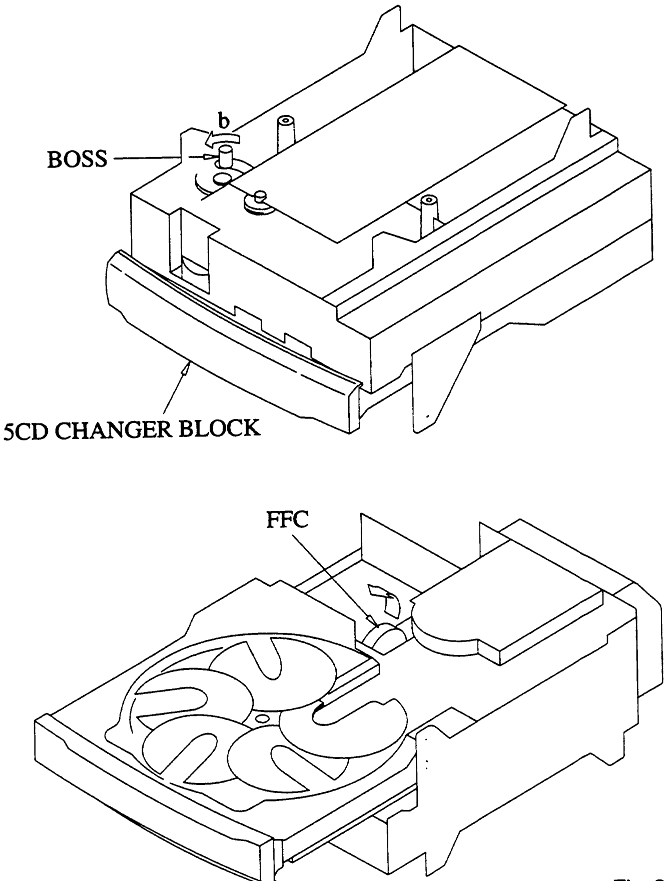

b
BOSS
5CD CHANGER BLOCK
FFC

Fig-3

3-2. 組立て方法

1) LEVER TRAYがFig-5の位置で、CDメカが下がっていることを確認する。
2) TRAY をCHAS MECHAのレールに沿って 組み込む。
3) 半分までTRAYを組み込んだらFFCを差し、TRAY を最後まで押し入れる。(Fig-6)

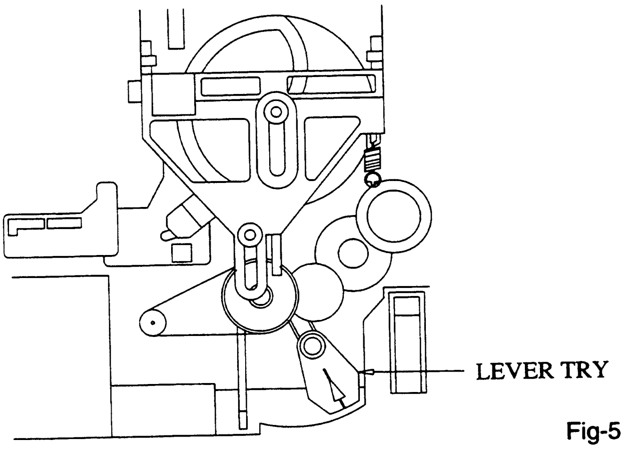


Fig-5

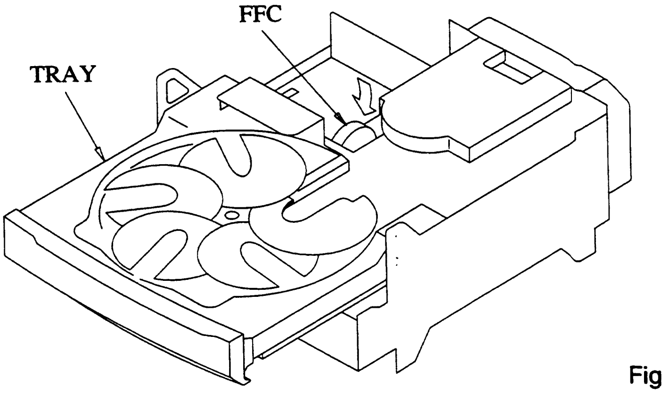


Fig-6

4. ターンテーブルの組立方法 (Fig-7)

1) LEVER TTを “C” の方向に押しながら、TURN TABLE 5CDを組み込む。(Fig-7)
この時、TRAY 5CDとTURN TABLE 5CDの切り欠きが同じ方向になるようにする。(Fig-8)

＊ 組み込む際のTURN TABLE 5CDのCD番号 (1～5) は任意で構いません。(Fig-7)

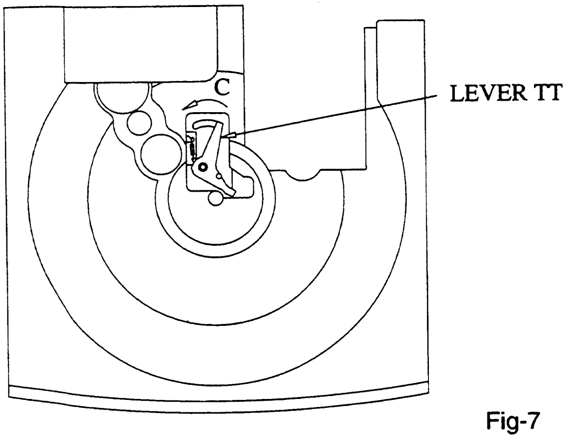


Fig-7

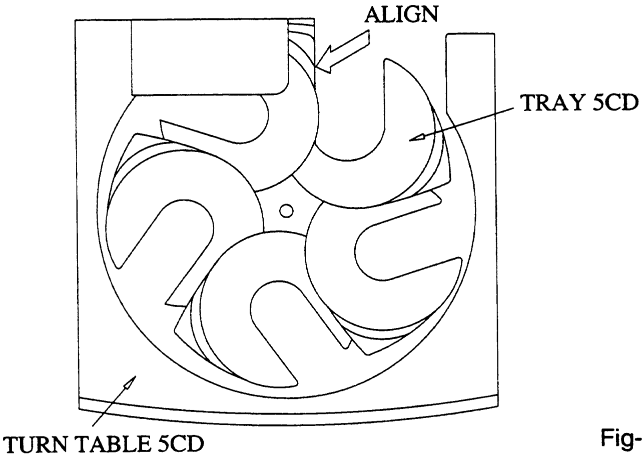
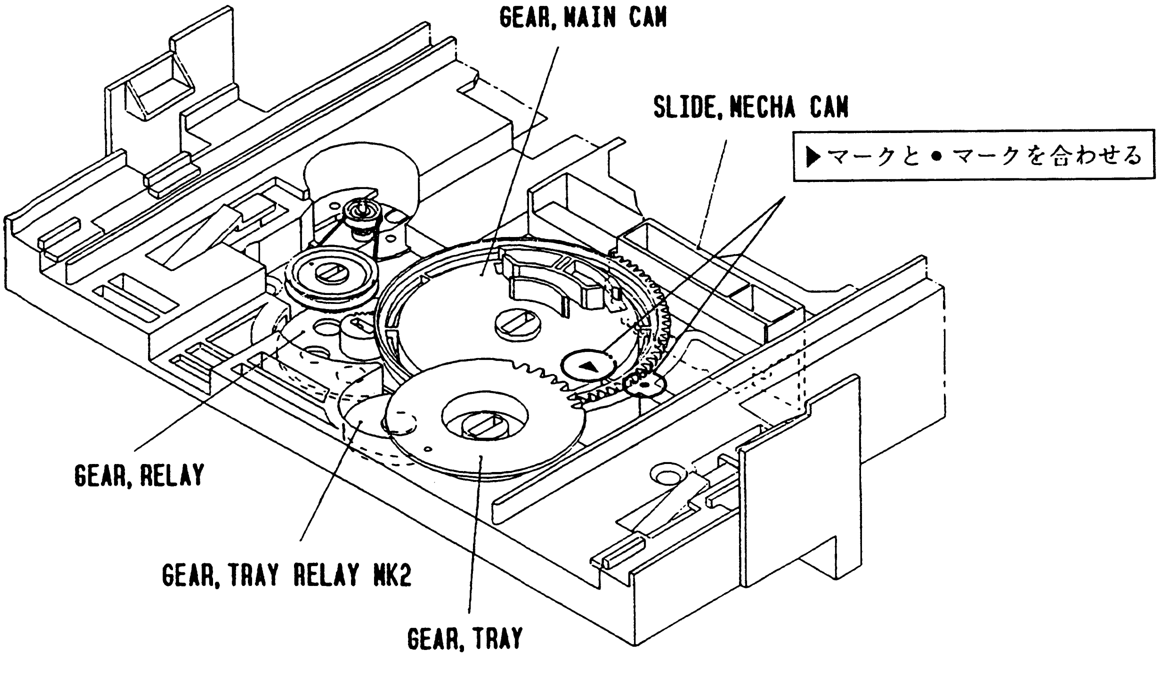

ALIGN
TRAY 5CD
TURN TABLE 5CD

Fig-8

ギヤ、メインカムの位相の合わせ方

1) CHAS, MECHのツメを下側に押し、TRAYを外す。
2) 下図の様にGEAR, MAIN CAMの矢印とCHAS, MECHAの点印を合わせる。
3) SLIDE, MECH CAMが右側の位置にある事を確認し、TRAYをゆっくり挿し込んで下さい。

注意: GEAR, MAIN CAMの位相がズレている場合、チャッキング及びトレーが誤動作を起こします。


GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

▶マークと●マークを合わせる

DISASSEMBLY INSTRUCTIONS

1. How to replace PICK UP.

1) Open the TRAY.
   Push the stopper to arrow direction and release half of the SHAFT SLED.
2) Turn GEAR MAIN CAM to the counterclockwise (arrow "a") direction, and lift up CD mechanism. (Fig-1)
3) Remove SHAFT SLED.
4) CD mechanism in down position, replace PICK UP.
5) Lift up CD mechanism (Fig-1), and Reassemble the SHAFT SLED.

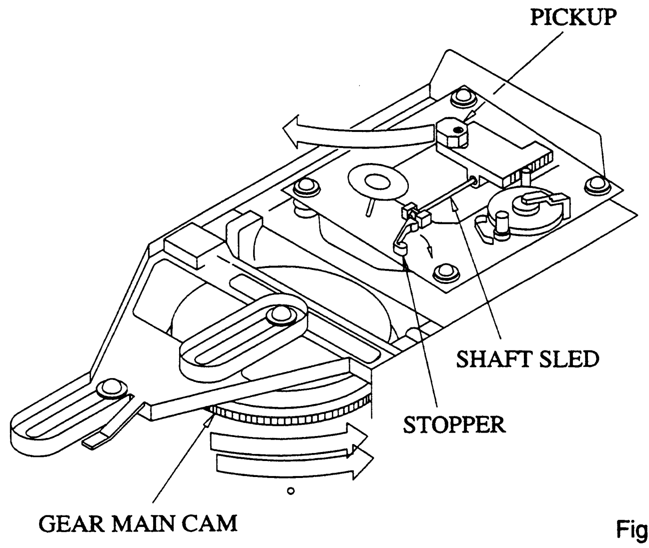

PICKUP
SHAFT SLED
STOPPER
GEAR MAIN CAM
a

Fig-1

2. How to remove the 5CD CHANGER BLOCK (Fig-2)

1) Remove the two FFC of the CD circuit board, and remove the five SCREWS.
2) Lift 5 CD CHANGER BLOCK from behind, and remove it. (5CD CHANGER BLOCK can be removed even if PANEL TRAY is not removed.)

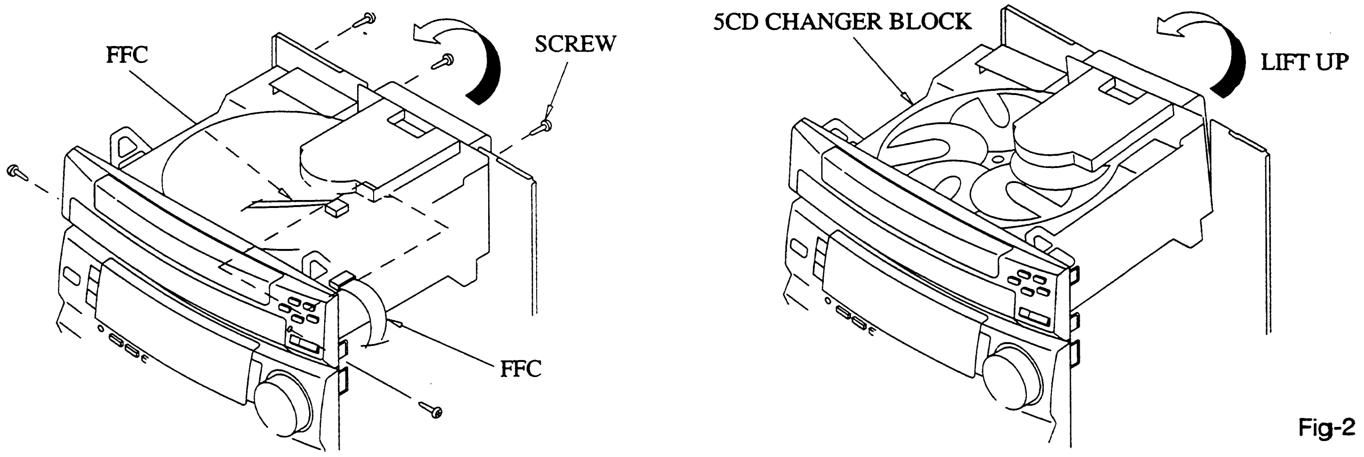

FFC
SCREW
FFC
5CD CHANGER BLOCK
LIFT UP

Fig-2

3. The disassemble and reassemble the TRAY

3-1. Disassembling procedure.

1) Push the PLATE GEAR'S Boss at the bottom part of CHAS MECHA strongly to the outside (arrow "b" direction). (Fig-3)
   (Confirm that TRAY appears a little in the front.)
2) Draw TRAY to the open position.
3) Remove FFC, and push the two LEVERS at both side of the CHAS MECH to remove TRAY. (Fig-4)

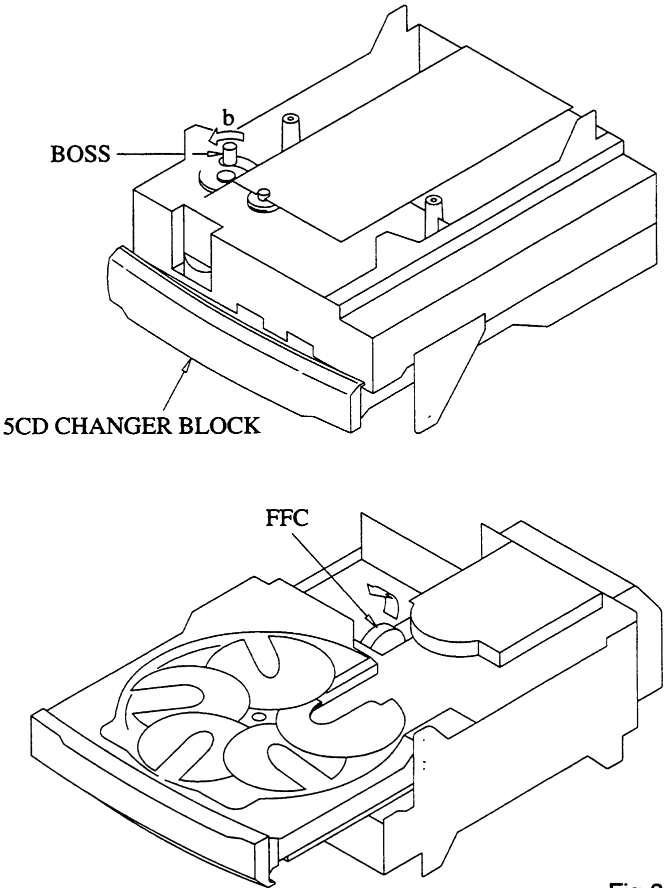


Fig-3

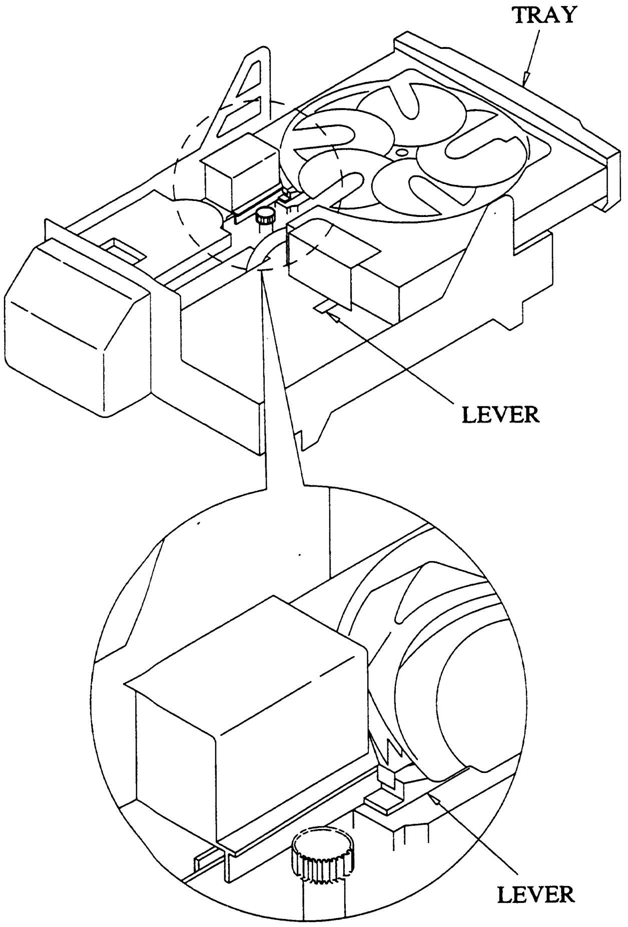


Fig-4

3-2. Reassembling procedure.

1) Confirm that LEVER TRAY is at the most right position and check for the CD Mechanism to be in the down position. (Fig-5)
2) Push in the TRAY along the rail of the CHAS MECHA.
3) After TRAY is half closed and FFC is put in, it can enter by force until the end of TRAY closed. (Fig-6)

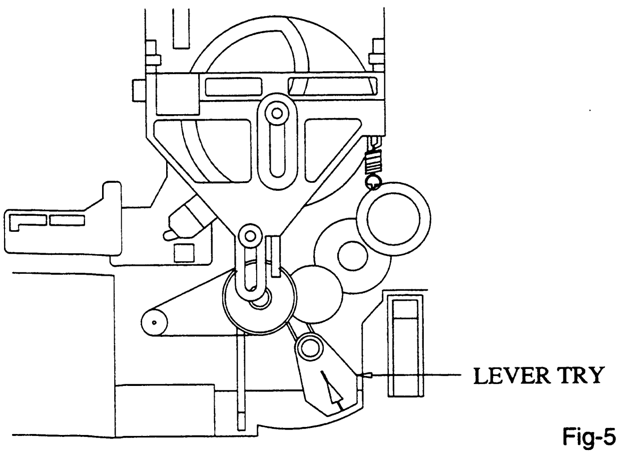


Fig-5

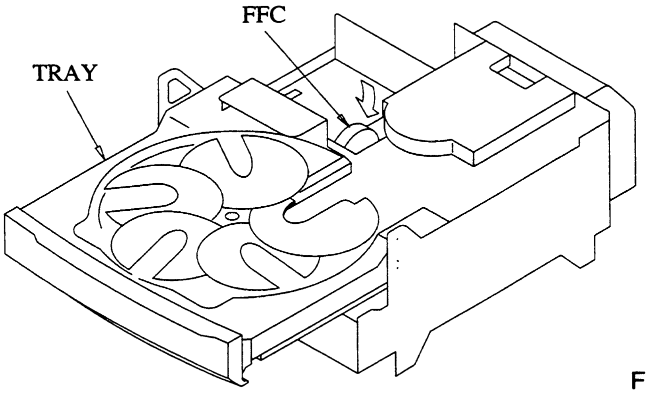


Fig-6

4. How to reassemble the TURN TABLE. (Fig-7)

1) Push LEVER TT in the direction of "C", and put in the TURN TABLE 5CD. (Fig-7)
   After reassembly, one of the TURN TABLE DISC TRAY (can be either one of the five disc trays) must be aligned with TURN TABLE 5CD. (Fig-8)
   That is, having no gap difference between the TURN TABLE 5CD and the TRAY 5CD.

* When reassembling the TURN TABLE 5CD, it is acceptable facing any CD number (1-5).

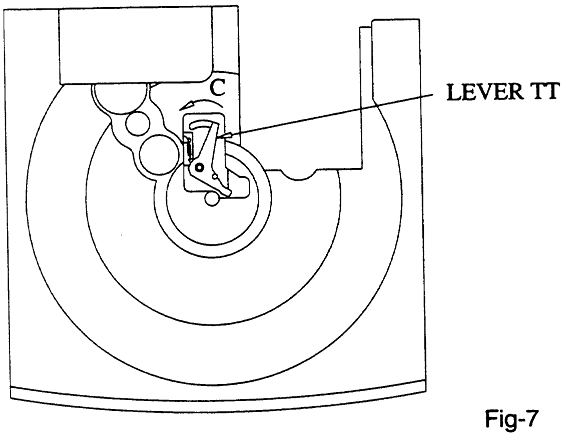


Fig-7

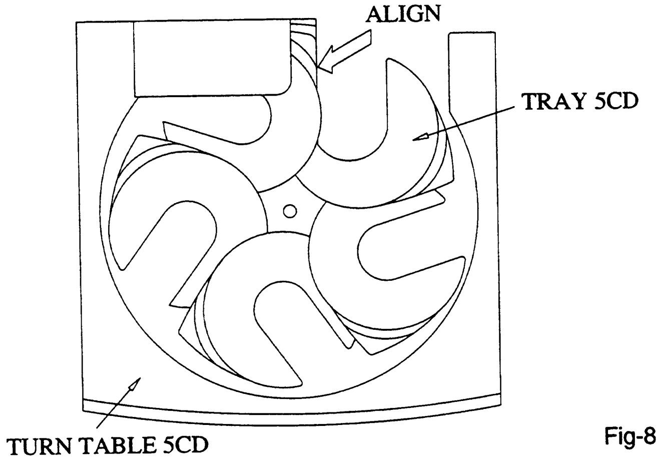
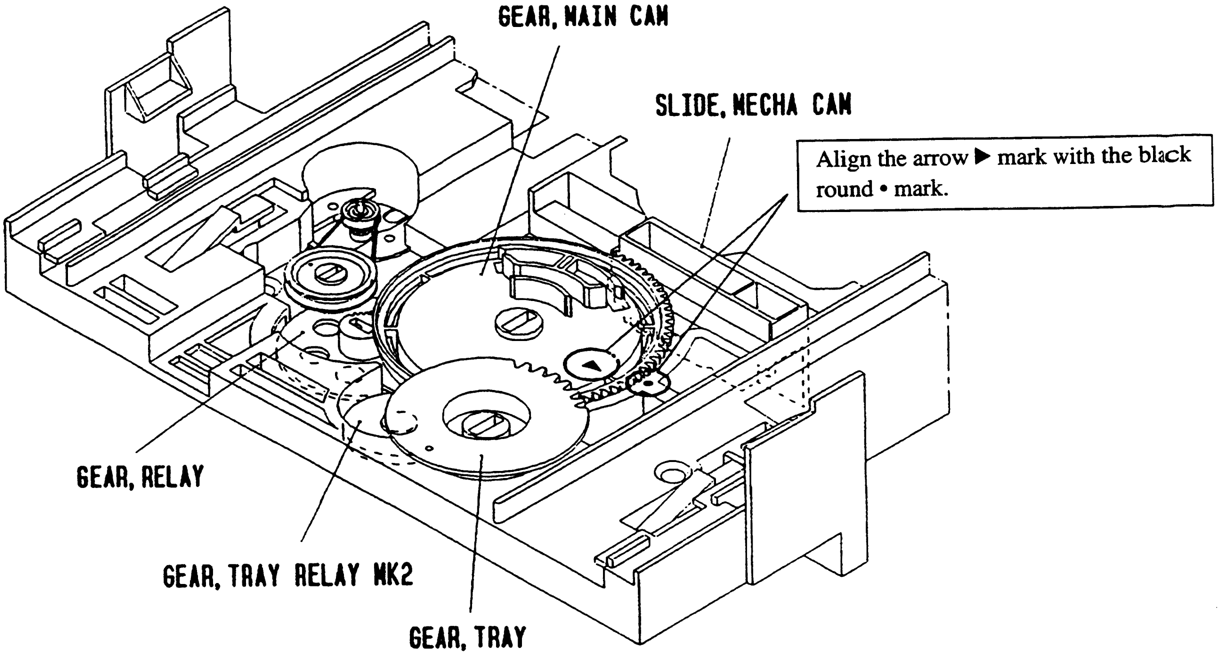

ALIGN
TRAY 5CD
TURN TABLE 5CD

Fig-8

How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.


GEAR, MAIN CAM
SLIDE, MECHA CAM
Align the arrow ▶ mark with the black round • mark.
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

MODEL NO. 6ZG-1 (D, F)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

IC

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
	87-017-745-010	2A	IC,CXA1782BQ
	87-070-294-010	2P	IC,CXD2508AQ
	87-017-888-080	1A	IC,NJM4558MD
	87-070-305-010	1F	IC,BA6897S
	87-001-982-010	1C	IC,TA7291S

TRANSISTOR

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
	87-026-463-080	0E	TR,2SA933S (0.3W)
	87-026-233-080	0E	TR,DTA114TK-TP
	87-026-211-080	0E	TR,DTA144EK
	89-111-625-080	0E	TR,2SA1162 (0.15W)
	87-026-239-080	0E	TR,DTC114TK (0.2W)
	87-A30-047-080	0E	TR,CSD655E
	89-421-722-380	0E	TR,2SD2172V/W
	89-320-011-080	0E	TR,2SC2001 (15W)
	87-026-223-080	0E	TR,DTC143TK
	89-110-155-080	0E	TR,2SA1015(0.4W)
	87-026-608-080	0E	C-TR,DTC 123 JK<F>
	89-327-125-080	0E	CHIP TR,2SC2712GR<D>

DIODE

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
	87-020-465-080	0E	DIODE,1SS133 (110MA)

CD MAIN C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C11	87-010-182-020	0E	C-CAP,S 2200P-50 B
C12	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C13	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C14	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C15	87-015-698-040	0E	CAP,E 4.7-50 7L
C16	87-012-393-020	0E	C-CAP,S 0.22-16,R,K
C17	87-010-197-020	0E	C-CAP,S 0.01-25 B
C18	87-010-402-040	0E	CAP,E 2.2-50 SME
C19	87-010-382-040	0E	CAP,E 22-25 SME
C20	87-010-213-020	0E	C-CAP,S 0.015-25 B
C21	87-010-197-020	0E	C-CAP,S 0.01-25 B
C22	87-010-263-040	0E	CAP,E 100-10
C23	87-010-197-020	0E	C-CAP,S 0.01-25 B
C24	87-016-369-020	0E	C-CAP,S 0.033-25 B K
C25	87-010-197-020	0E	C-CAP,S 0.01-25 B
C26	87-016-369-020	0E	C-CAP,S 0.033-25 B K
C27	87-010-197-020	0E	C-CAP,S 0.01-25 B
C28	87-010-146-020	0E	C-CAP,S 2P-50 CH
C29	87-010-154-020	0E	C-CAP,S 10P-50 CH
C30	87-010-263-040	0E	CAP,E 100-10
C31	87-010-178-020	0E	C-CAP,S 1000P-50 B
C32	87-010-198-020	0E	C-CAP,S 0.022-25 B
C33	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C34	87-010-197-020	0E	C-CAP,S 0.01-25 B
C35	87-010-263-040	0E	CAP,E 100-10
C36	87-015-677-040	0E	CAP,E 100-6.3 7L
C37	87-010-197-020	0E	C-CAP,S 0.01-25 B
C38	87-010-260-080	0E	CAP, ELECT 47-25V
C39	87-010-196-020	0E	C-CAP,S 0.1-25 F
C91	87-010-263-040	0E	CAP,E 100-10
C101	87-010-596-020	0E	C-CAP,S 0.047-16 RK
C102	87-010-188-020	0E	C-CAP,S 6800P-50 B
C103	87-018-133-080	0E	CAPACITOR,CER 4700P-16V
C104	87-012-156-020	0E	C-CAP,S 220P-50 CH
C105	87-010-404-040	0E	CAP,E 4.7-50 SME
C106	87-010-263-040	0E	CAP,E 100-10
C107	87-010-197-020	0E	C-CAP,S 0.01-25 B
C108	87-016-526-020	0E	C-CAP,S 0.47-16 3K
C109	87-010-197-020	0E	C-CAP,S 0.01-25 B
C112	87-010-318-020	0E	C-CAP,S 47P-50 CH<D>
C113	87-010-263-080	0E	CAP, ELECT 100-10V
C114	87-010-197-020	0E	C-CAP,S 0.01-25 B
C115	87-010-318-020	0E	C-CAP,S 47P-50 CH
C116	87-010-318-020	0E	C-CAP,S 47P-50 CH
C117	87-010-197-020	0E	C-CAP,S 0.01-25 B
C122	87-010-186-020	0E	C-CAP,S 4700P-50 B
C123	87-010-382-040	0E	CAP,E 22-25 SME
C201	87-010-318-020	0E	C-CAP,S 47P-50 CH
C202	87-010-318-020	0E	C-CAP,S 47P-50 CH
C203	87-010-321-020	0E	C-CAP,S 82P-50 CH
C204	87-010-321-020	0E	C-CAP,S 82P-50 CH
C205	87-010-321-020	0E	C-CAP,S 82P-50 CH
C206	87-010-321-020	0E	C-CAP,S 82P-50 CH
C207	87-012-153-020	0E	C-CAP,S 120P-50 CH
C208	87-012-153-020	0E	C-CAP,S 120P-50 CH
C209	87-012-153-020	0E	C-CAP,S 120P-50 CH
C210	87-012-153-020	0E	C-CAP,S 120P-50 CH
C211	87-010-403-040	0E	CAP,E 3.3-50 SME
C212	87-010-403-080	0E	CAP, ELECT 3.3-50V
C213	87-010-186-020	0E	C-CAP,S 4700P-50 B
C214	87-010-186-020	0E	C-CAP,S 4700P-50 B
C231	87-016-251-040	0E	CAP,E 220-16 SMG
C232	87-010-263-080	0E	CAP, ELECT 100-10V
C301	87-010-196-020	0E	C-CAP,S 0.1-25 F
C302	87-010-260-080	0E	CAP, ELECT 47-25V
C401	87-010-403-080	0E	CAP, ELECT 3.3-50V
C402	87-010-403-040	0E	CAP,E 3.3-50 SME
C501	87-016-459-040	0E	CAP,E 470-10 SMG
C502	87-010-197-020	0E	C-CAP,S 0.01-25 B
C503	87-010-263-040	0E	CAP,E 100-10
C504	87-010-196-020	0E	C-CAP,S 0.1-25 F
C505	87-010-196-020	0E	C-CAP,S 0.1-25 F
C506	87-010-196-020	0E	C-CAP,S 0.1-25 F
C507	87-010-196-020	0E	C-CAP,S 0.1-25 F
C508	87-016-459-040	0E	CAP,E 470-10 SMG
C509	87-010-196-020	0E	C-CAP,S 0.1-25 F
C510	87-010-196-020	0E	C-CAP,S 0.1-25 F
C601	87-010-196-020	0E	C-CAP,S 0.1-25 F
C602	87-016-251-040	0E	CAP,E 220-16 SMG
C603	87-010-196-020	0E	C-CAP,S 0.1-25 F
C701	87-010-322-020	0E	C-CAP,S 100P-50 CH
C702	87-010-318-020	0E	C-CAP,S 47P-50 CH
C703	87-010-318-020	0E	C-CAP,S 47P-50 CH
C705	87-010-178-020	0E	C-CAP,S 1000P-50 B
C706	87-010-178-080	0E	CHIP CAP 1000P
C901	87-010-260-040	0E	CAP,E 47-25 SME<D>
C902	87-010-196-020	0E	C-CAP,S 0.1-25 F<D>
CN3	86-ZG1-609-010	1D	CONN ASSY,6P
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
L11	87-003-102-080	0E	COIL, 10UH
LED901	87-A40-123-010	0E	LED,SLZ-8128A-01-B<D>
M601	87-045-305-010	1E	MOTOR, RF-500TB DC-5V (2MA)
R36	87-022-365-020	0E	C-RES,S 100K-1/10W F
R37	87-022-363-020	0E	C-RES,S 68K-1/10W F
R38	87-022-363-020	0E	C-RES,S 68K-1/10W F
R39	87-022-363-020	0E	C-RES,S 68K-1/10W F
R40	87-022-363-020	0E	C-RES,S 68K-1/10W F
R41	87-022-365-020	0E	C-RES,S 100K-1/10W F
SFR11	87-024-175-080	0E	SEMI-FIXED RESISTOR, 47K
SFR12	87-024-173-080	0E	SEMI-FIXED RESISTOR, 22K
SFR13	87-024-176-080	0E	SEMI-FIXED RESISTOR, 100K
SW601	87-036-109-010	1A	PUSH SWITCH
SW602	87-036-109-010	1A	PUSH SWITCH
SW603	87-036-109-010	1A	PUSH SWITCH
X101	87-030-313-080	1D	VIB,XTAL 16.9344 MHZ

LED C.B<F>

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED701	87-017-733-080	0E	LED,SEL1250SM<F>
LED702	87-017-350-080	0E	LED,SEL1550CM<F>

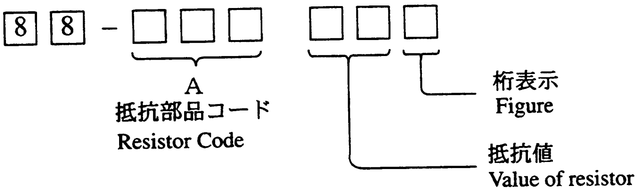
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED703	87-017-733-080	0E	LED,SEL1250SM<F>

T-T C.B

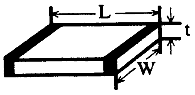
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

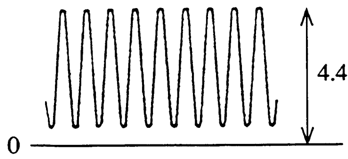


チップ抵抗
Chip resistor

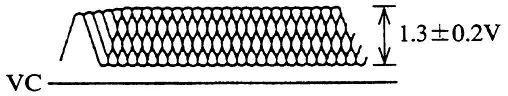
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

WAVE FORM

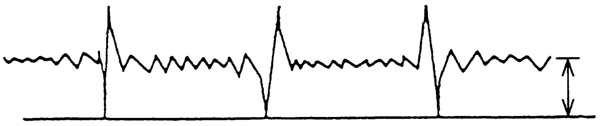
① SYSTEM CLOCK VOLT/DIV: 2V
f=16.9344MHz TIME/DIV: 0.1μS



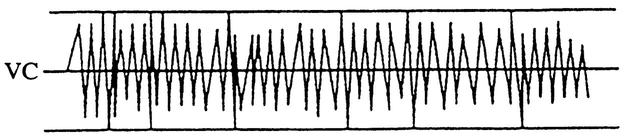
② RF VOLT/DIV: 500mV
TIME/DIV: 0.5μS



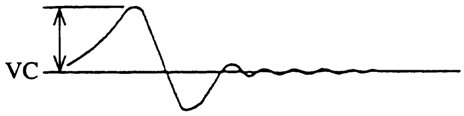
③ FOCUS VOLT/DIV: 200mV
TIME/DIV: 2mS



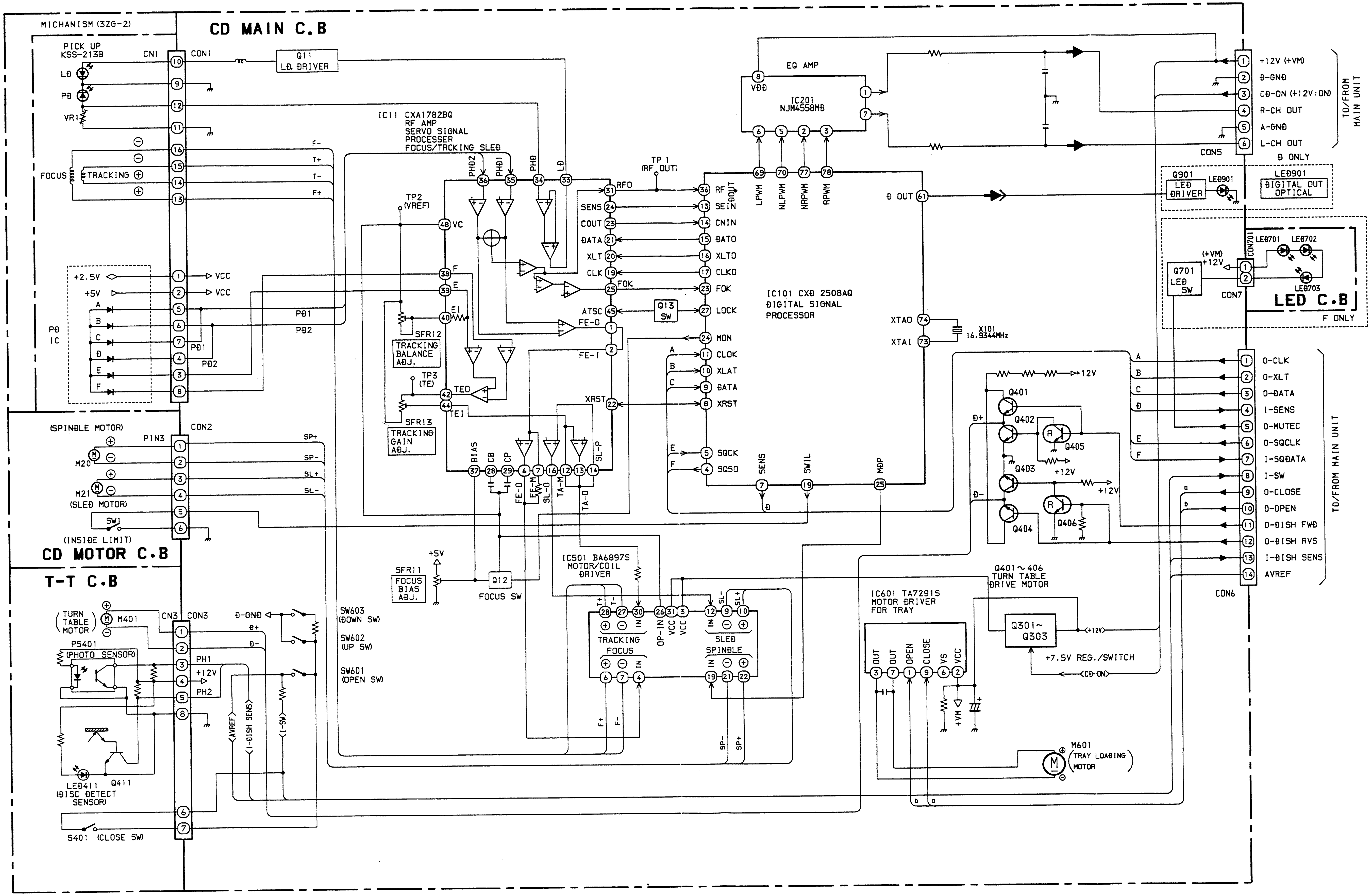
④ TRACKING TIME/DIV: 1mS



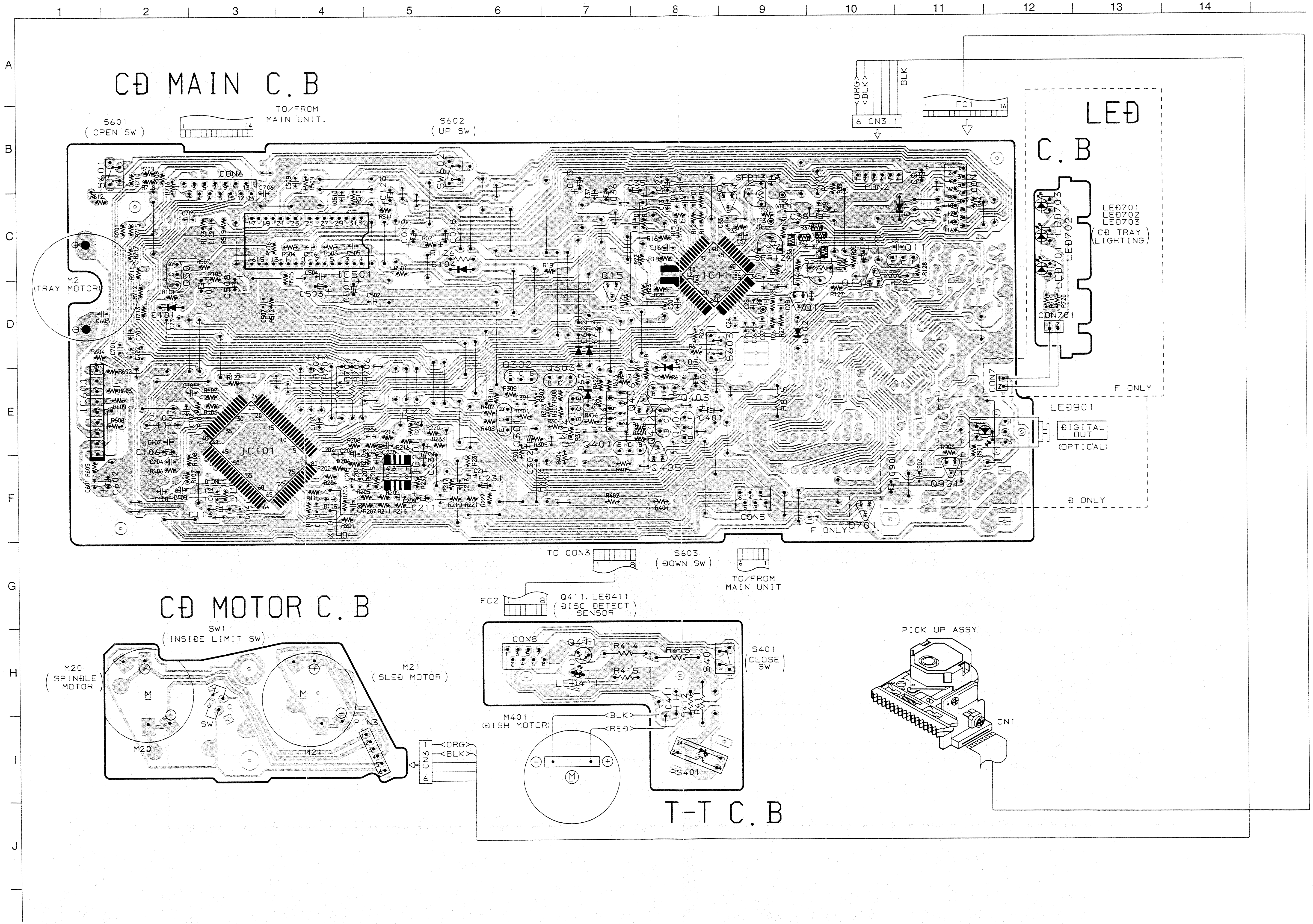
⑤ FOCUS SEARCH



BLOCK DIAGRAM

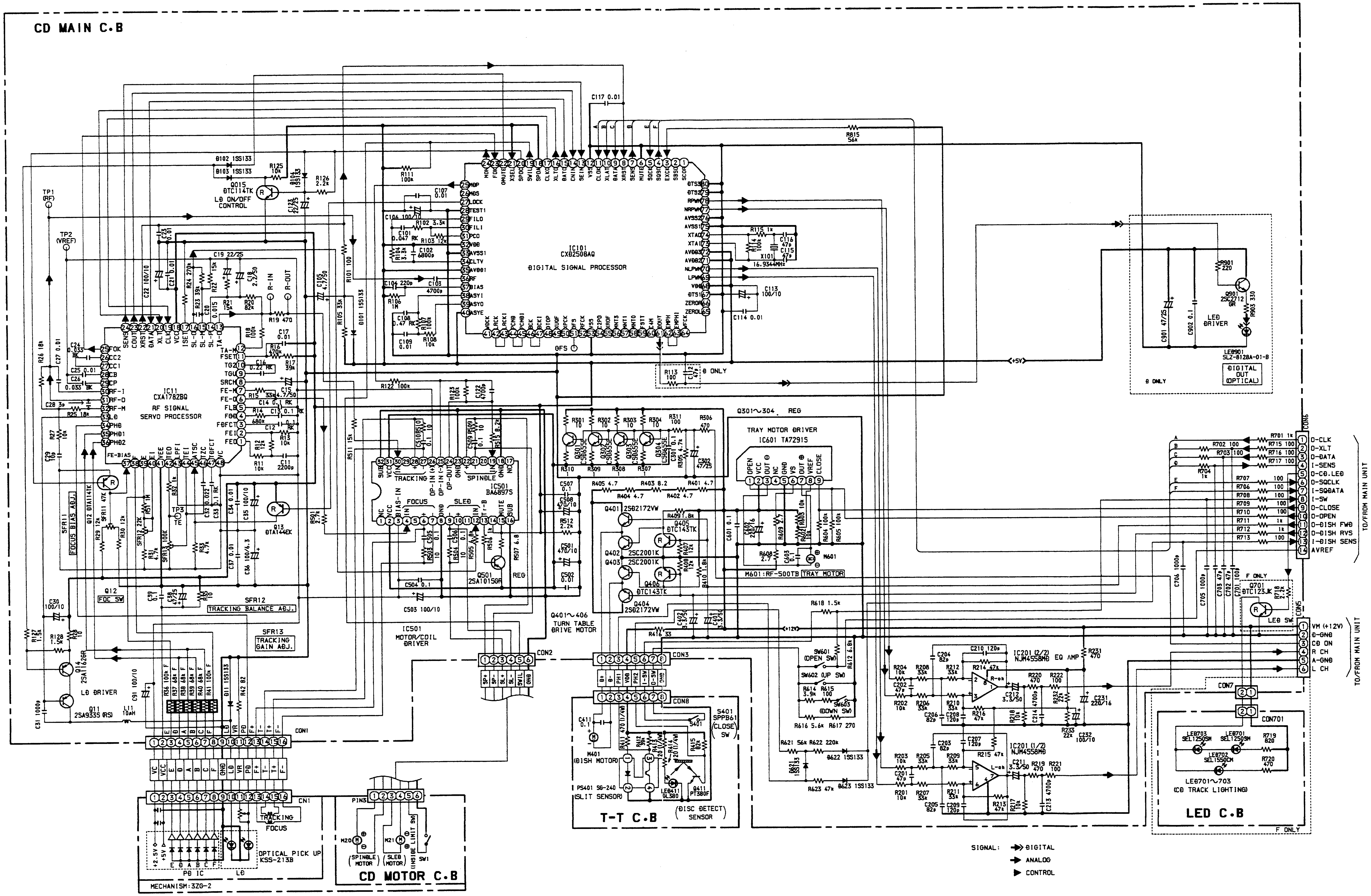

MICHANISM (3ZG-2)
CD MAIN C.B
PICK UP
KSS-213B
CN1
CON1
LD
PD
VR1
Q11
LD DRIVER
FOCUS
TRACKING
F-
T+
T-
F+
IC11 CXA1782BQ
RF AMP
SERVO SIGNAL
PROCESSER
FOCUS/TRCKING SLED
PHD2
PHD1
PHD
LD
TP 1
(RF OUT)
RFO
TP2
(VREF)
VC
SENS
COUT
DATA
XLT
CLK
FOK
ATSC
FE-O
FE-I
XRST
Q13
SW
+2.5V
+5V
VCC
PD
IC
PD1
PD2
SFR12
TRACKING
BALANCE
ADJ.
TP3
(TE)
TEO
TEI
SFR13
TRACKING
GAIN
ADJ.
EI
BIAS
CB
CP
FE-M
SL-O
TA-M
TA-O
SL-P
(SPINDLE MOTOR)
PIN3
CON2
M20
M21
(SLED MOTOR)
SW1
(INSIDE LIMIT)
SP+
SP-
SL+
SL-
CD MOTOR C.B
T-T C.B
(TURN TABLE MOTOR)
M401
CN3
CON3
PS401
(PHOTO SENSOR)
PH1
+12V
PH2
LED411
Q411
(DISC DETECT SENSOR)
S401 (CLOSE SW)
D-GND
D+
D-
SW603 (DOWN SW)
SW602 (UP SW)
SW601 (OPEN SW)
(AVREF)
(I-DISH SENS)
(I-SW)
SFR11
FOCUS
BIAS
ADJ.
+5V
Q12
FOCUS SW
IC501 BA6897S
MOTOR/COIL
DRIVER
T+
T-
IN
OP-IN
VCC
VCC
SL-
SL+
TRACKING
FOCUS
SLED
SPINDLE
F+
F-
SP-
SP+
EQ AMP
VDD
IC201
NJM4558MD
LPWM
NLPWM
NRPWM
RPWM
RF
SEIN
CNIN
DATO
XLTO
CLKO
FOK
LOCK
MON
CLOK
XLAT
DATA
XRST
SQCK
SQSO
SENS
SWIL
MDP
DOUT
D OUT
IC101 CXD 2508AQ
DIGITAL SIGNAL
PROCESSOR
XTAO
XTAI
X101
16.9344MHz
+12V
Q401
Q402
Q403
Q404
Q405
Q406
Q401~406
TURN TABLE
DRIVE MOTOR
IC601 TA7291S
MOTOR DRIVER
FOR TRAY
OUT
OUT
OPEN
CLOSE
VS
VCC
+VM
Q301~
Q303
(+12V)
+7.5V REG./SWITCH
(CD-ON)
M601
(TRAY LOADING MOTOR)
+12V (+VM)
D-GND
CD-ON (+12V:ON)
R-CH OUT
A-GND
L-CH OUT
CON5
D ONLY
TO/FROM MAIN UNIT
Q901
LED DRIVER
LED901
LED901
DIGITAL OUT
OPTICAL
Q701
LED
SW
CON701
LED701
LED702
LED703
(+VM)
+12V
CON7
LED C.B
F ONLY
O-CLK
O-XLT
O-DATA
I-SENS
O-MUTEC
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
AVREF
CON6
TO/FROM MAIN UNIT

WIRING

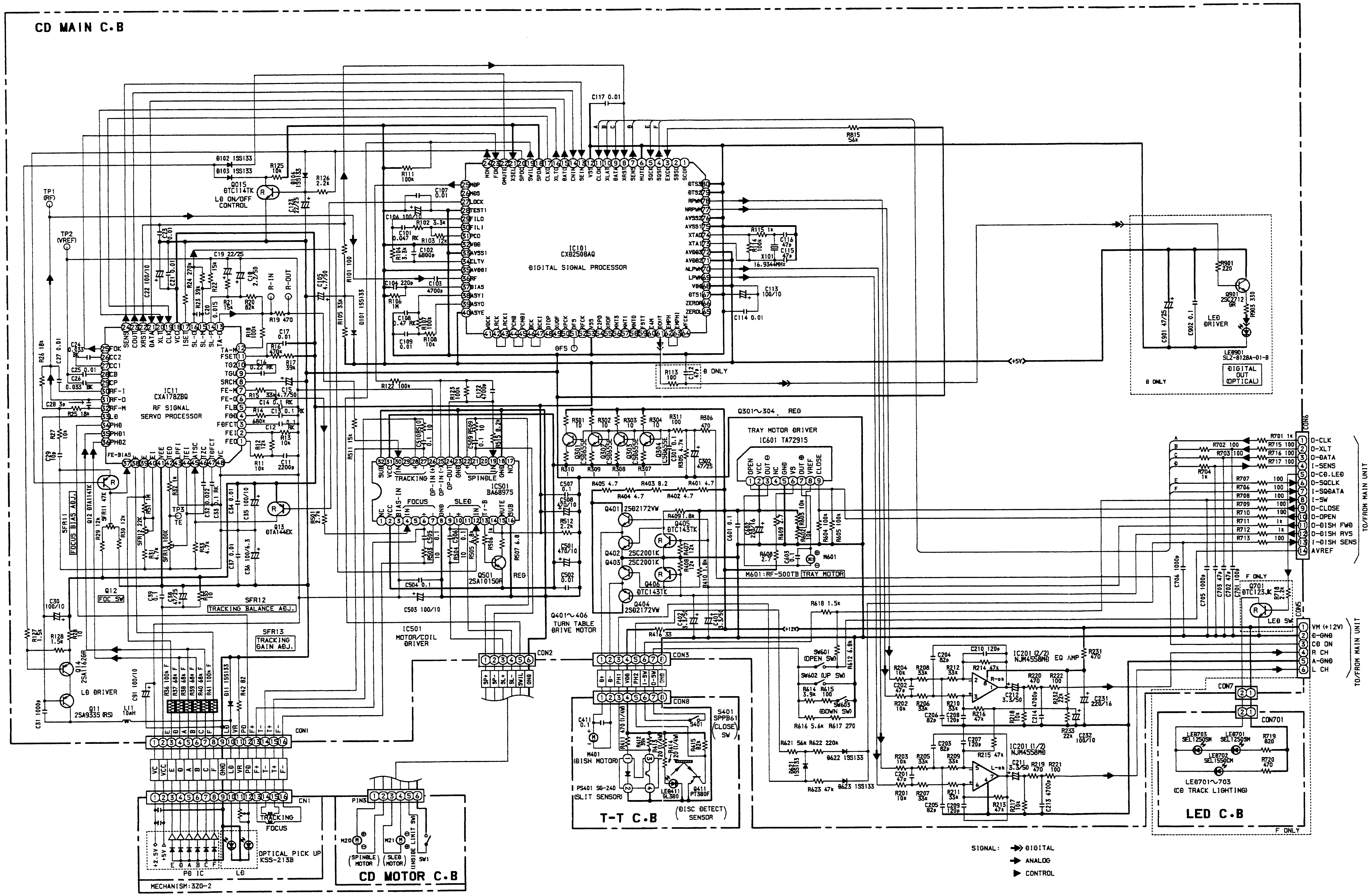


CD MAIN C.B
S601 (OPEN SW)
TO/FROM MAIN UNIT.
S602 (UP SW)
6 CN3 1
<ORG>
<BLK>
BLK
FC1
LED C.B
LED701
LED702
LED703
(CD TRAY LIGHTING)
CON701
CON7
F ONLY
LED901
DIGITAL OUT (OPTICAL)
D ONLY
M2 (TRAY MOTOR)
IC501
IC11
IC101
IC601
CON6
CON2
CON5
Q901
F ONLY
TO CON3
S603 (DOWN SW)
TO/FROM MAIN UNIT
FC2
Q411, LED411 (DISC DETECT SENSOR)
CD MOTOR C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
M20
M21
SW1
PIN3
CN3
<ORG>
<BLK>
CON8
Q411
LED411
R414
R413
R415
S401 (CLOSE SW)
M401 (DISH MOTOR)
<BLK>
<RED>
PS401
T-T C.B
PICK UP ASSY
CN1

SCHEMATIC DIAGRAM


CD MAIN C.B
IC101 CXD2508AQ DIGITAL SIGNAL PROCESSOR
IC11 CXA1782BQ RF SIGNAL SERVO PROCESSOR
TP1 (RF)
TP2 (VREF)
TP3
Q015 DTC114TK LD ON/OFF CONTROL
Q11 2SA933S (RS)
Q14 2SA1626R
LD DRIVER
Q12 DTA114TK
Q12 FOC SW
Q13 DTA144EK
SFR11 FOCUS BIAS ADJ.
SFR12 TRACKING BALANCE ADJ.
SFR13 TRACKING GAIN ADJ.
X101 16.9344MHz
D ONLY
IC501 BA6897S MOTOR/COIL DRIVER
Q501 2SA1015GR
REG
Q301~304 REG
TRAY MOTOR DRIVER IC601 TA7291S
M601: RF-500TB TRAY MOTOR
Q401~406 TURN TABLE DRIVE MOTOR
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
Q901 2SC2712 LED DRIVER
LED901 SLZ-8128A-01-B DIGITAL OUT (OPTICAL)
D ONLY
Q701 DTC123JK
F ONLY
LED SW
CON1
CON2
CON3
CON5
CON6
CON7
CON8
CON701
CN1
PIN3
D-CLK
D-XLT
D-DATA
I-SENS
D-CD.LED
D-SQCLK
I-SQDATA
I-SW
D-CLOSE
D-OPEN
D-DISH FWD
D-DISH RVS
I-DISH SENS
AVREF
TO/FROM MAIN UNIT
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
TO/FROM MAIN UNIT
S401 SPPB61 (CLOSE SW)
M401 (DISH MOTOR)
PS401 SG-240 (SLIT SENSOR)
LED411 GL380
Q411 PT380F
(DISC DETECT SENSOR)
T-T C.B
SW601 (OPEN SW)
SW602 (UP SW)
SW603 (DOWN SW)
LED701~703 (CD TRACK LIGHTING)
LED C.B
F ONLY
TRACKING
FOCUS
OPTICAL PICK UP KSS-213B
PD IC
LD
MECHANISM: 3ZG-2
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CD MOTOR C.B
SIGNAL:
DIGITAL
ANALOG
CONTROL

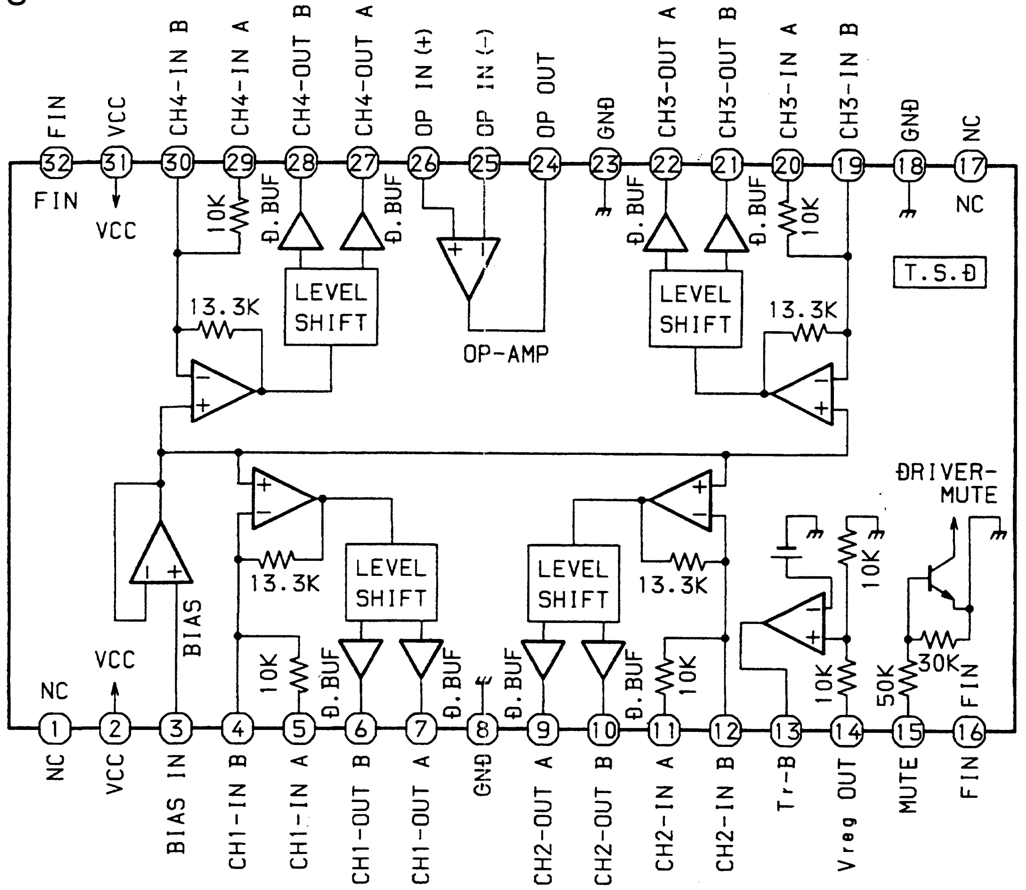
SCHEMATIC DIAGRAM



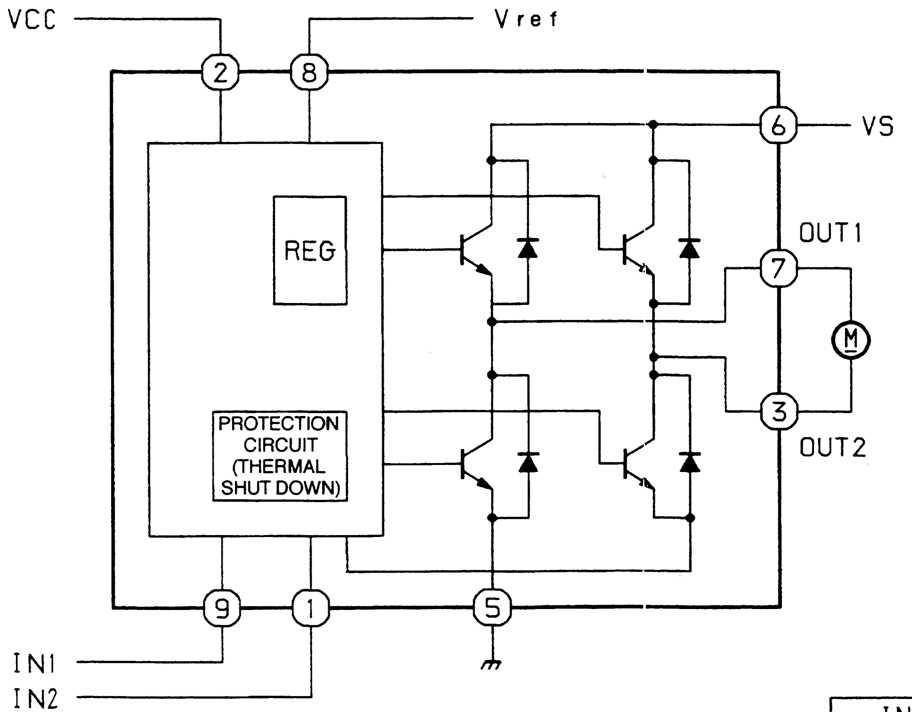
CD MAIN C.B
IC101 CXD2508AQ
DIGITAL SIGNAL PROCESSOR
IC11 CXA1782BQ
RF SIGNAL SERVO PROCESSOR
IC501 BA6897S
IC501 MOTOR/COIL DRIVER
TRACKING
SPINDLE
FOCUS
SLED
TRAY MOTOR DRIVER
IC601 TA7291S
Q301~304 REG
Q401~406 TURN TABLE DRIVE MOTOR
M601: RF-500TB TRAY MOTOR
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
X101 16.9344MHz
TP1 (RF)
TP2 (VREF)
TP3 TE
Q015 DTC114TK
LD ON/OFF CONTROL
Q14 2SA1626R
LD DRIVER
Q11 2SA933S (RS)
Q12 DTA114TK
Q12 FOC SW
Q13 DTA144EK
SFR11 FOCUS BIAS ADJ.
SFR12 TRACKING BALANCE ADJ.
SFR13 TRACKING GAIN ADJ.
Q501 2SA1015GR
REG
Q901 2SC2712
LED DRIVER
LE0901 SLZ-8128A-01-B
DIGITAL OUT (OPTICAL)
D ONLY
F ONLY
Q701 DTC123JK
LED SW
D-CLK
D-XLT
D-DATA
I-SENS
D-CD.LED
D-SQCLK
I-SQDATA
I-SW
D-CLOSE
D-OPEN
D-DISH FWD
D-DISH RVS
I-DISH SENS
AVREF
TO/FROM MAIN UNIT
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
TO/FROM MAIN UNIT
SW601 (OPEN SW)
SW602 (UP SW)
SW603 (DOWN SW)
D622 1SS133
D623 1SS133
M401 (DISH MOTOR)
PS401 SG-240 (SLIT SENSOR)
S401 SPPB61 (CLOSE SW)
LED411 GL380
Q411 PT380F
(DISC DETECT SENSOR)
T-T C.B
LED C.B
LED701~703 (CD TRACK LIGHTING)
LED703 SEL1250SM
LED701 SEL1250SM
LED702 SEL1550CM
CON1
CON2
CON3
CON5
CON6
CON7
CON8
CON701
CN1
PIN3
OPTICAL PICK UP KSS-213B
TRACKING
FOCUS
PD IC
LD
MECHANISM: 3ZG-2
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CD MOTOR C.B
SIGNAL:
DIGITAL
ANALOG
CONTROL

IC BLOCK DIAGRAM

IC, BA6897S


FIN
VCC
CH4-IN B
CH4-IN A
CH4-OUT B
CH4-OUT A
OP IN (+)
OP IN (-)
OP OUT
GND
CH3-OUT A
CH3-OUT B
CH3-IN A
CH3-IN B
GND
NC
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
FIN
VCC
NC
10K
D.BUF
D.BUF
D.BUF
D.BUF
10K
T.S.D
13.3K
LEVEL SHIFT
OP-AMP
LEVEL SHIFT
13.3K
DRIVER-MUTE
13.3K
LEVEL SHIFT
LEVEL SHIFT
13.3K
BIAS
VCC
NC
10K
D.BUF
D.BUF
D.BUF
D.BUF
10K
10K
10K
50K
30K
FIN
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
NC
VCC
BIAS IN
CH1-IN B
CH1-IN A
CH1-OUT B
CH1-OUT A
GND
CH2-OUT A
CH2-OUT B
CH2-IN A
CH2-IN B
Tr-B
Vreg OUT
MUTE
FIN

IC, TA7291S


VCC
Vref
2
8
6
VS
REG
OUT1
7
M
3
OUT2
PROTECTION CIRCUIT (THERMAL SHUT DOWN)
9
1
5
IN1
IN2

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : High impedance

Note: Input is active "H".

IC DESCRIPTION

IC, CXA1782BQ

端子番号	端子名称	I/O	機　能　説　明
1	FEO	O	フォーカス·エラーアンプの出力端子です。 内部でFZCコンパレータ入力に接続されています。
2	FEI	I	フォーカス·エラーの入力端子です。
3	FDFCT	I	ディフェクト時の時定数用コンデンサ接続端子です。
4	FGD	I	フォーカス·サーボの高域ゲインを落とす場合、この端子をコンデンサで接地します。
5	FLB	I	フォーカス·サーボの低域持ち上げ用時定数外付け端子です。
6	FEO	O	フォーカス·ドライブ出力です。
7	FEM	I	フォーカス·アンプの反転入力端子です。
8	SRCH	I	フォーカス·サーチ波㧓を作るための時定数外付け端子です。
9	TGU	I	トラッキング高域ゲイン切り換え用時定数外付け端子です。
10	TG2	I	トラッキング高域ゲイン切り換え用時定数外付け端子です。
11	FSET	I	フォーカス·トラッキングの位相補償のピーク設定用端子です。
12	TAM	I	トラッキング·アンプの反転入力端子です。
13	TAO	O	トラッキングドライブ出力。
14	SLP	I	スレッド·アンプの非反転入力端子です。
15	SLM	I	スレッド·アンプの反転入力端子です。
16	SLO	O	スレッドドライブ出力。
17	ISET	I	フォーカスサーチ、トラックジャンプ、スレッドキックの高さを決める電流を流します。
18	VCC	—	+5V電源供給端子。
19	CLK	I	シリアルデータ転送クロック入力です。
20	XLT	I	ラッチ入力です。
21	DATA	I	シリアルデータ入力です。
22	XRST	I	リセット入力端子"L"でリセットします。
23	COUT	O	トラック数カウント用信号出力です。
24	SENS	O	コマンドにより、FZC、DFCT、TZC、Gain、BAL、などを出力します。
25	FOK	O	フォーカスOKコンパレータの出力端子です。
26	CC2	O	DEFECTボトム·ホールド出力が容量結合されて入力される入力端子です。
27	CC1	I	DEFECTボトム·ホールド出力端子です。
28	CB	I	DEFECTボトム·ホールドコンデンサ接続端子です。
29	CP	I	MIRRホールド·コンデンサの接続端子です。かつ、MIRRコンパレータの非反転入力端子です。
30	RFI	I	RFサミングアンプの出力が容量結合されて入力される入力端子です。
31	RFO	O	RFサミングアンプの出力端子です。(EYEパターンのチェックポイント)
32	RFM	I	RFサミングアンプの反転入力端子です。 この端子とRFO端子間に接続された抵抗でRFアンプのゲインが決まります。
33	LD	O	APCアンプの出力端子です。
34	PHD	I	APCアンプの入力端子です。
35～36	PHD1～2	I	RF I-Vアンプの反転入力端子です。光学ピックアップのA+C、B+D端子に接続して電流入力で受けます。

端子番号	端子名称	I/O	機　能　説　明
37	FE BIAS	I	フォーカス･エラーアンプのバイアス調整用端子です。
38～39	F～E	I	F､EのI-Vアンプの反転入力端子です。光学ピックアップのF､Eに接続して電流入力で受けます。
40	EI	—	I-VアンプEのゲイン調整用端子です。
41	VEE	—	GND接続端子。
42	TEO	O	トラッキング･エラーアンプの出力端子です。E-F信号が出力されます。
43	LPFI	I	BAL調整用コンパレータ入力端子です。
44	TEI	I	トラッキング･エラーの入力端子です。
45	ATSC	I	ATSC検出用ウインドウコンパレータ入力端子です。
46	TZC	I	トラッキング･ゼロクロスコンパレータの入力端子です。
47	TDFCT	I	ディフェクト時の時定数用コンデンサ接続端子。
48	VC	O	VREFの直流電圧出力端子です。(VDD/2)

IC, CXD2508AQ

端子番号	端子名称	I/O	機 能 説 明
1	SCOR	O	サブコードシンクS0かS1どちらか検出された時H。
2	SBSO	O	SUBP～Wのシリアル出力。
3	EXCK	I	SBSOリード･アウト用クロック入力。
4	SQSO	O	SUBQ 80BITのシリアル出力。
5	SQCK	I	SQSOリード･アウト用クロック入力。
6	MUTE	I	Hでミュート､Lで解除。
7	SENS	O	SENS出力､CPUへ出力。
8	XRST	I	システムリセット､Lでリセット。
9	DATA	I	CPUよりシリアルデータ入力。
10	XLAT	I	CPUよりラッチ入力､立ち下がりでシリアルデータをラッチ。
11	CLOK	I	CPUよりシリアルデータ転送クロック入力。
12	VSS	—	GND端子。
13	SEIN	I	SSPよりセンス入力。
14	CNIN	I	トラックジャンプ数カウント信号入力。
15	DATO	O	SSPへのシリアルデータ出力。
16	XLTO	O	SSPへのシリアルデータラッチ出力､立ち下がりでラッチ。
17	CLKO	O	SSPへのシリアルデータ転送クロック出力。
18、20	SPOA、C	I	マイコン拡張インターフェース。
19	XTSL	I	Xtal選択入力端子。Xtalが16.9344MHzの時L、33.8688MHzの時Hにする。
22	XLON	O	マイコン拡張インターフェース。
23	FOK	I	フォーカスOK入力端子､SENS出力とサーボ･オートシーケンサに用いる。
24	MON	O	スピンドルモータのON/OFFコントロール出力。
25	MDP	O	スピンドルモータのサーボ制御。
26	MDS	O	スピンドルモータのサーボ制御。
27	LOCK	O	GFSを460Hzでサンプリングし､GFSがHの時H出力､8回連続Lの時L出力。
28	TEST1	I	TEST用端子。(GNDへ接続)
29	FILO	O	マスターPLL用(スレーブ=デジタルPLL)フィルター出力。
30	FILI	I	マスターPLL用フィルター入力。
31	PCO	O	マスターPLL用チャージポンプ出力。
32	VDD	—	電源端子。(+5V)
33	AVSS1	—	GND端子。
34	CLTV	I	マスターPLL用VCOコントロール電圧入力。
35	AVDD1	—	電源端子。(+5V)
36	RF	I	EFM信号入力。
37	BIAS	I	アシンメトリ補正回路定電流入力。
38	ASYI	I	アシンメトリ補正回路コンパレート電圧入力。
39	ASYO	O	EFMフルスイング出力。(L=VSS､H=VDD)
40	ASYE	I	L:アシンメトリ補正OFF、H:アシンメトリ補正ON。
41	WDCK	O	48bitスロット用D/Aインターフェイス､ワードクロック(2Fs)。
42	LRCK	O	48bitスロット用D/Aインターフェイス､LRクロック(Fs)。
43	LRCKI	I	DACへのLRクロック入力。(48bitスロット)

端子番号	端子名称	I/O	機　能　説　明
44	PCMD	O	D/Aインターフェイス、シリアルデータ。(2’ COMP, MSBファースト)
45	PCMDI	I	DACへのオーディオデータ入力。(48bitスロット)
46	BCK	O	D/Aインターフェイス、ビットクロック。
47	BCKI	I	DACへのビットクロック入力。(48bitスロット)
48	GTOP	O	GTOP出力。
49	XUGF	O	XUGF出力。
50	XPCK	O	XPLCK出力。
51	GFS	O	GFS出力。
52	RFCK	O	RFCK出力。
53	VSS	—	GND端子。
54	C2PO	O	C2PO出力。
55	XROF	O	XRAOF出力。
56	MNT3	O	MNT3出力。
57	MNT1	O	MNT1出力。
58	MNT0	O	MNT0出力。
59	FSTT	O	73,74端子の2/3分周出力。
60	C4M	O	4.2336MHz出力。
61	DOUT	O	Digital Out出力端子。
62	EMPH	O	再生ディスクがエンファシス有りの時H、無しの時L。
63	EMPHI	I	DACのディエンファシスON/OFF、HでON、LでOFF。
64	WFCK	O	WFCK(WRITE FRAME CLOCK)出力。
65	ZEROL	O	無音データ検出出力、無音データ検出時“H”(Lch)。
66	ZEROR	O	無音データ検出出力、無音データ検出時“H”(Rch)。
67	DTSI	I	DAC用テスト端子。(通常L)
68	VDD	—	電源端子。(+5V)
69	NLPWM	O	Lch PWM出力。(正相)
70	LPWM	O	Lch PWM出力。(逆相)
71	AVDD2	—	Lch PWMドライバー用電源。(+5Vへ接続)
72	AVDD3	—	Xtal用電源。(+5Vへ接続)
73	XTAI	I	33.8688MHzのXtal発振回路入力。
74	XTAO	O	33.8688MHzのXtal発振回路出力。
75	AVSS1	—	XtalへのGND入力。(GNDへ接続)
76	AVSS2	—	PWMドライバへのGND入力。(GNDへ接続)
77	NRPWM	O	Rch PWM出力。(逆相)
78	RPWM	O	Rch PWM出力。(正相)
79	DTS2	I	DAC用テスト端子2。(通常L)
80	DTS3	I	DAC用テスト端子3。(通常L)

IC, CXA1782BQ

Pin No.	Pin Name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	—	+ 5 V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU.
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU.
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (Eye pattern check point)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin Name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35-36	PHD1-2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE BIAS	I	Bias adjustment pin of the focus error amplifier.
38-39	F-E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	—	Gain adjustment pin of the I-V amplifier E.
41	VEE	—	GND connection pin
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, CXD2508AQ

Pin No.	Pin Name	I/O	Description
1	SCOR	O	H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUBP-W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from CPU .
10	XLAT	I	Latch input from CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from CPU to transfer serial data.
12	VSS	—	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18, 20	SPOA, C	I	Microprocessor expansion interface.
19	XTSL	I	X'tal selection input terminal. "L" at 16.9344MHz X'tal. "H" at 33.86888MHz.
22	XLON	O	Microprocessor expansion interface.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
28	TEST1	I	TEST. (Connected to GND)
29	FILO	O	Filter output to master PLL. (slave=digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	—	Power supply input. (+5V)
33	AVSS1	—	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	—	Power supply input. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparate voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L=VSS, H=VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON
41	WDCK	O	D/A interface, word clock (2Fs) for 48-bit slot.
42	LRCK	O	D/A interface, LR clock (Fs) for 48-bit slot.

Pin No.	Pin Name	I/O	Description
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCKI	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUFG output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	—	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the playback disc has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	No sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	No sound data detection output. H (R-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC. (Normally "L")
68	VDD	—	Power supply input. (+5V)
69	NLPWM	O	L-ch PWM output. (reversed polarity)
70	LPWM	O	L-ch PWM output. (normal polarity)
71	AVDD2	—	Power supply input to L-ch PWM driver. (Connected to +5V)
72	AVDD3	—	Power supply input to X'tal. (Connected to +5V)
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS1	—	GND input to X'tal. (Connected GND)
76	AVSS2	—	GND input to PWM driver. (Connected to GND)
77	NRPWM	O	R-ch PWM output. (reversed phase)
78	RPWM	O	R-ch PWM output. (normal phase)
79	DTS2	I	TEST-2 for DAC. (Normally "L")
80	DTS3	I	TEST-3 for DAC. (Normally "L")

TEST MODE

1. CD テストモードの起動方法
   ファンクション CD の釦を押しながら、AC プラグを挿入する。
   上記により FL 表示管が全て点灯し、テストモードが起動します。

2. CD テストモードの解除方法
   下記のいずれか 1 つの操作で解除します。
   - ファンクション釦を押す (CD ファンクション釦以外)
   - パワー SW 釦を押す。
   - AC プラグを抜く。

3. CD テストモードの機能説明
   テストモード起動後、各操作釦を押す事により次の No1 ～ No5 の各モード機能が使用できます。

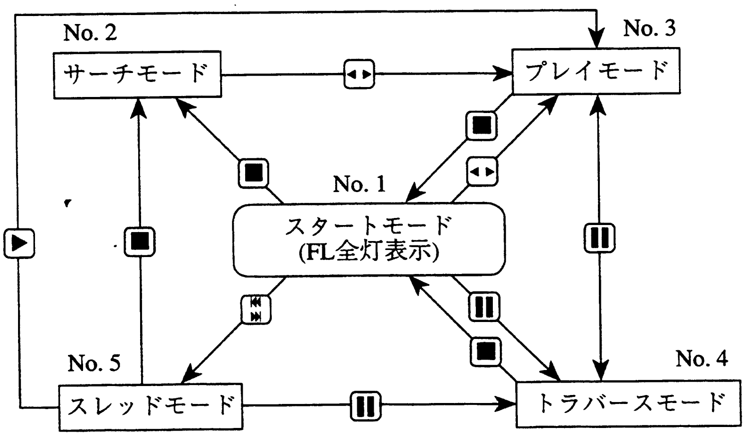
Mode/No.	操作	FL 表示	動作	内容
スタートモード No.1	起動	全灯表示	・TEST MODE 起動 ・LASER DIODE 常時発光 (CD ブロック電源 ON)	・FL 表示確認 (全灯) ・APC 回路確認 ・レーザー電流測定 (レーザー電流コントロール、トランジスタのエミッター GND 間の抵抗の両端。)
サーチモード No.2	■ 釦	CD--	・連続フォーカスサーチ (PU レンズがフルスイングを繰り返す) ＊ 10 分以上の連続フォーカスは避けて下さい。 ＊注 1	FOCUS SERVO ・フォーカスラッチ波形確認 ・フォーカスエラー波形確認 (サーチモードでは FOK/FZC は監視せず。)
プレイモード No.3	◀▶ 釦	CD11	・通常再生 ・TOC READ 出来ない場合 フォーカスサーチを続行 ＊注 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO FOK/FZC 確認
トラバースモード No.4	⏸ 釦	CD11	・DISC 通常再生中 1 回押す トラッキングサーボ OFF 2 回押す トラッキングサーボ ON ＊注 2	TRACKING SERVO ON/OFF トラッキングバランス(トラバース)調整
スレッドモード No.5	⏮ 釦 ⏭	全灯表示	・ピックアップ外周へ移動 ・ピックアップ内周へ移動 ＊注 3 (再生中は通常動作致します)	SLED SERVO SLED メカ動作確認

＊注 1　フォーカスサーチを連続して 10 分以上動作し続けるとドライバー IC が発熱し保護回路が働く為、トラッキングサーボがかからない状態となる場合が有ります。この様な場合には、電源を切り約 10 分間放熱後、再スタートして下さい。

＊注 2　『⏸』状態で、『⏮』または『⏭』釦を押さない事。『⏸』状態解除後、再生出来なくなります。『⏸』状態で、『⏮』または『⏭』釦を押した場合には『■』釦を押しスタートモード (No.1) に戻して下さい。

＊注 3　ピックアップが最内周、最外周の位置でも『⏮』または『⏭』釦を押している間はスレッドモータが回転する為、ギヤ破損に注意して下さい。

4. 操作概要
   下図の様にスタートモードから、矢印方向の流れで各モードの操作が行えます。モード変更は、下図の流れに従い行って下さい。



尚、DISC DIRECT PLAY 釦を押した場合には、上図の PLAY 釦を押した時と同様の動作となります。またプレイモード／トラバースモード時に open/close 釦により、トレイを open させた場合には、スタートモードに戻ります。

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

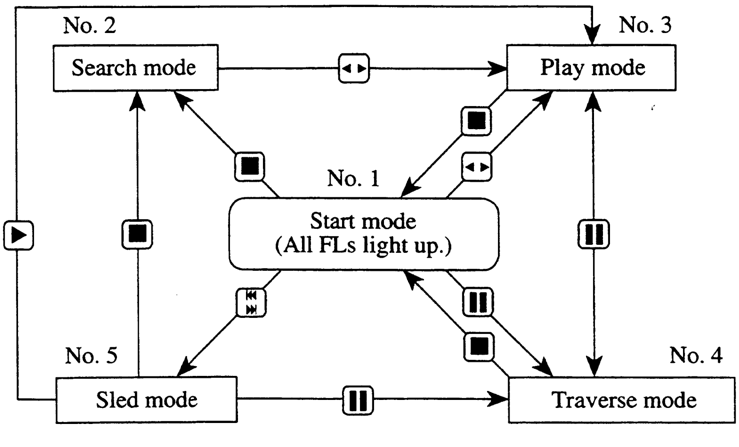
2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD- -	• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀ ▶ key	CD1 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD1 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

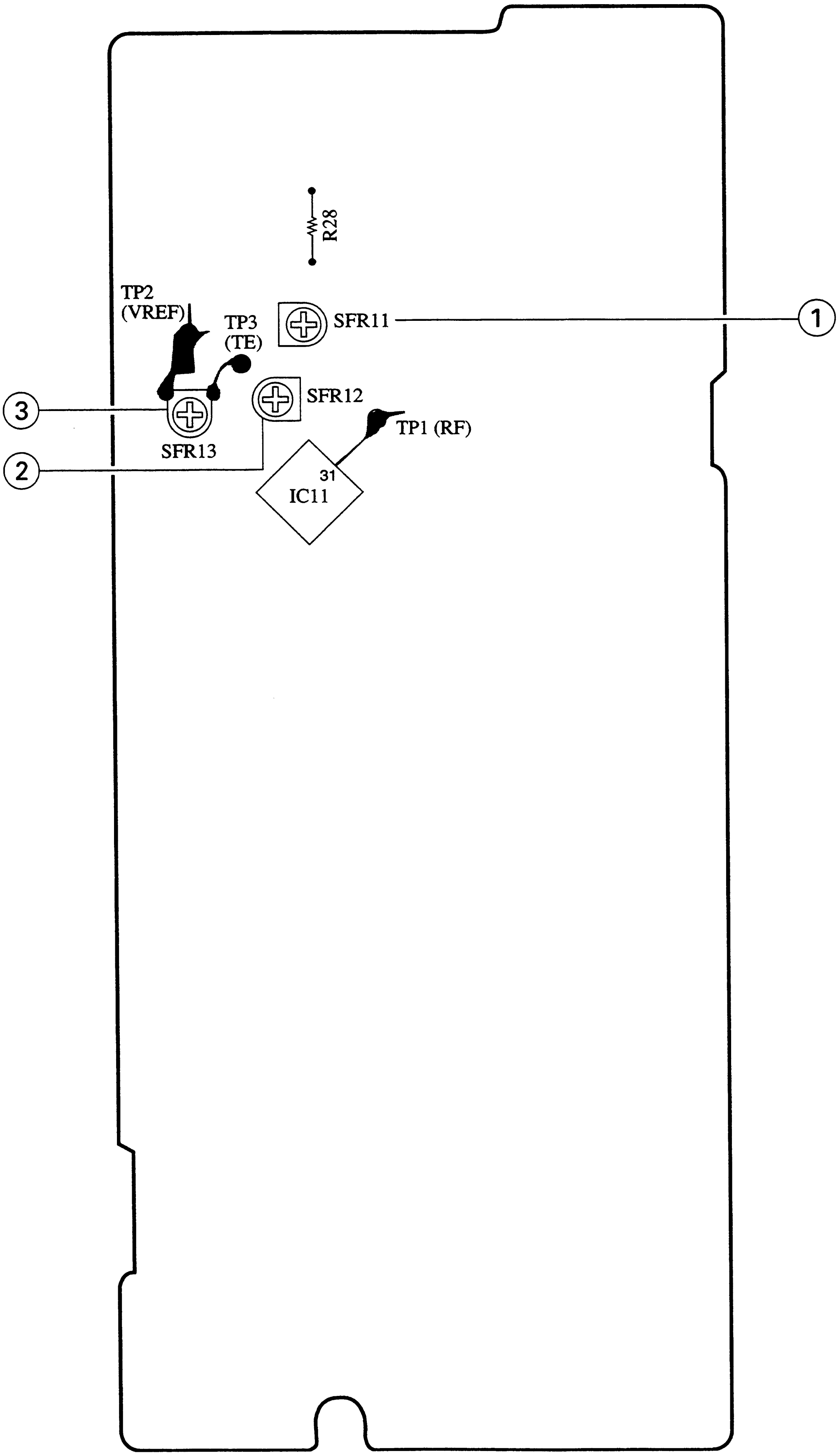
* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.
* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



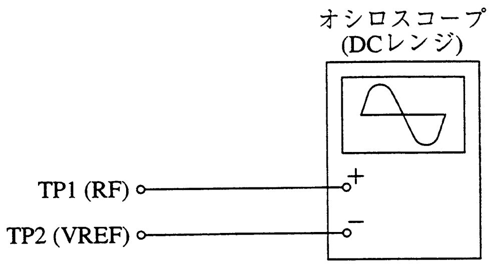
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

CD MAIN C.B (PATTERN SIDE)

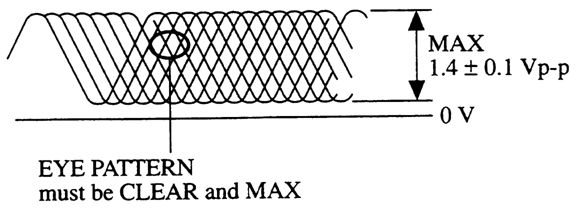

R28
TP2
(VREF)
TP3
(TE)
SFR11
①
③
SFR12
TP1 (RF)
SFR13
②
31
IC11

注意: ・ (10: 1) のプローブを接続して、調整して下さい。
・ 各調整には、オシロスコープの⊖側をTP2 (VREF) に接続して下さい。

1. フォーカスバイアス調整
この調整は、光学系ブロックを交換修理した場合に調整すること。

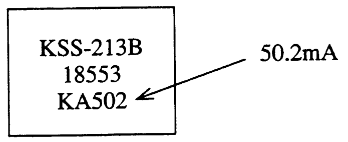


1) テストポイントTP1 (RF)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が最大となり、かつ中央のひし形が、鮮明になるようにSFR11を調整する。



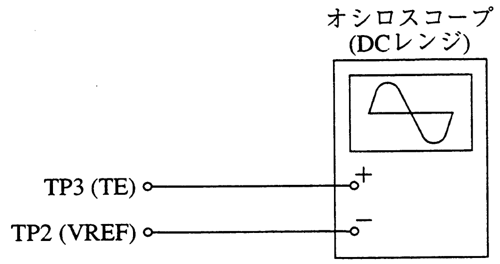
VOLT/DIV: 50mV
TIME/DIV: 0.5 μS

注意: レーザー電流の確認はR28 (10Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

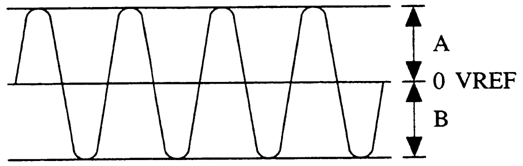


$$\text{レーザー電流Iop} = \frac{\text{R28の両端電圧}}{10\Omega}$$

2. トラッキング・バランス調整



1) テストポイントTP3 (TE)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて、▶PLAY状態にする。
4) SFR13を回しトラッキングゲインを絞る。
5) オシロスコープのトラバース波形が、下図のように上下対称になるようにSFR12を調整する。
6) 調整後、各端子のアースリード線をはずす。



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. トラッキングゲイン調整
この調整を正確に行うためには、サーボアナライザーが必要です。しかし、このゲインはマージンを持っているため、通常では少し位ずれていてもほとんど問題はありません。したがってこの調整は行わないで下さい。フォーカス/トラッキングゲインは2軸デバイス動作時の機械的雑音と機械的ショックに対するピックアップの追従性を決めています。しかし、これは互いに相反するため、両方を満足する点に調整してあります。

- ● ゲインを上げると2軸デバイス動作時の雑音が増加する。
- ● ゲインを下げると機械的ショックに弱くなり音飛びを起こしやすくなる。

そしてゲインの調整がずれていると次頁の様な症状が出ます。

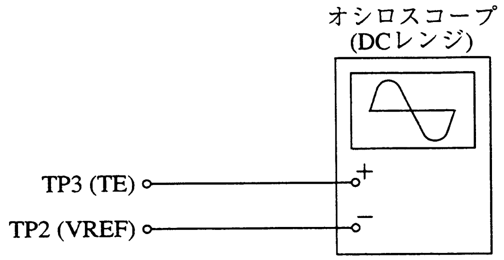
ゲイン 症状	(フォーカス)	トラッキング
● STOP→▶PLAY時，又は自動選曲時 (⏮, ⏭ボタンを押したとき) に演奏が始まるまでの時間が長くなる。(通常は2秒位です。)	低い	低い 又は 高い
● STOP→▶PLAY時，又は自動選曲時 (⏮, ⏭ボタンを押したとき) に演奏が始まらないでディスクが回転を続ける。	——	低い
● STOP→▶PLAY時，しばらくすると回転が止まる。	低い又は高い	——
● 演奏中に音がとぎれる。又，タイムカウンターの表示が進まなくなる。	——	低い
● 2軸ディバイス動作時のノイズが多くなる。	高い	高い

なお、簡易調整として下記の方法があります。

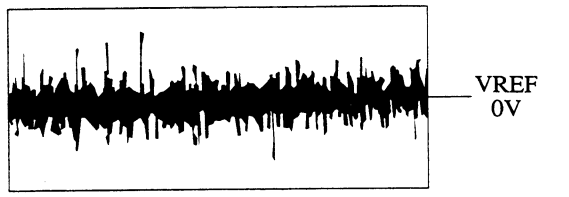
—— 簡易調整 ——

注意: 正確には調整できないため、調整を行う前にボリュームの位置を憶えておいて、簡易調整を行った後のボリュームの位置と比較して、そのずれが少ないときは元のボリュームの位置に戻しておいて下さい。

調整方法:



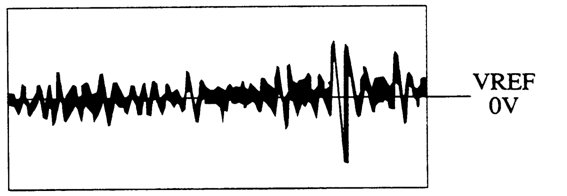
1. セットを水平に置く。
(セットを水平に置かないと2軸デバイスが重力の影響を受け、調整出来ません。)
2. テストディスクTCD-782 (YEDS-18)を入れて2曲目を再生する。
3. オシロスコープをTP3 (TE)、TP2 (VREF) に接続する。
4. オシロスコープの波形が下図の波形になるようにSFR13を調整する。(トラッキングゲイン調整)



VOLT/DIV: 50mV
TIME/DIV: 1mS

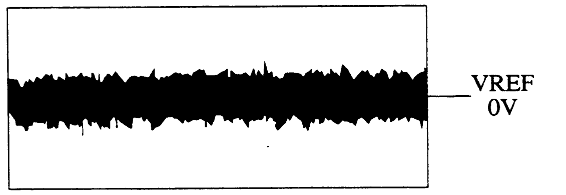
● 悪い例

トラッキングゲインが低い時
(調整されている波形と比べて基本波が表れるようになる。)



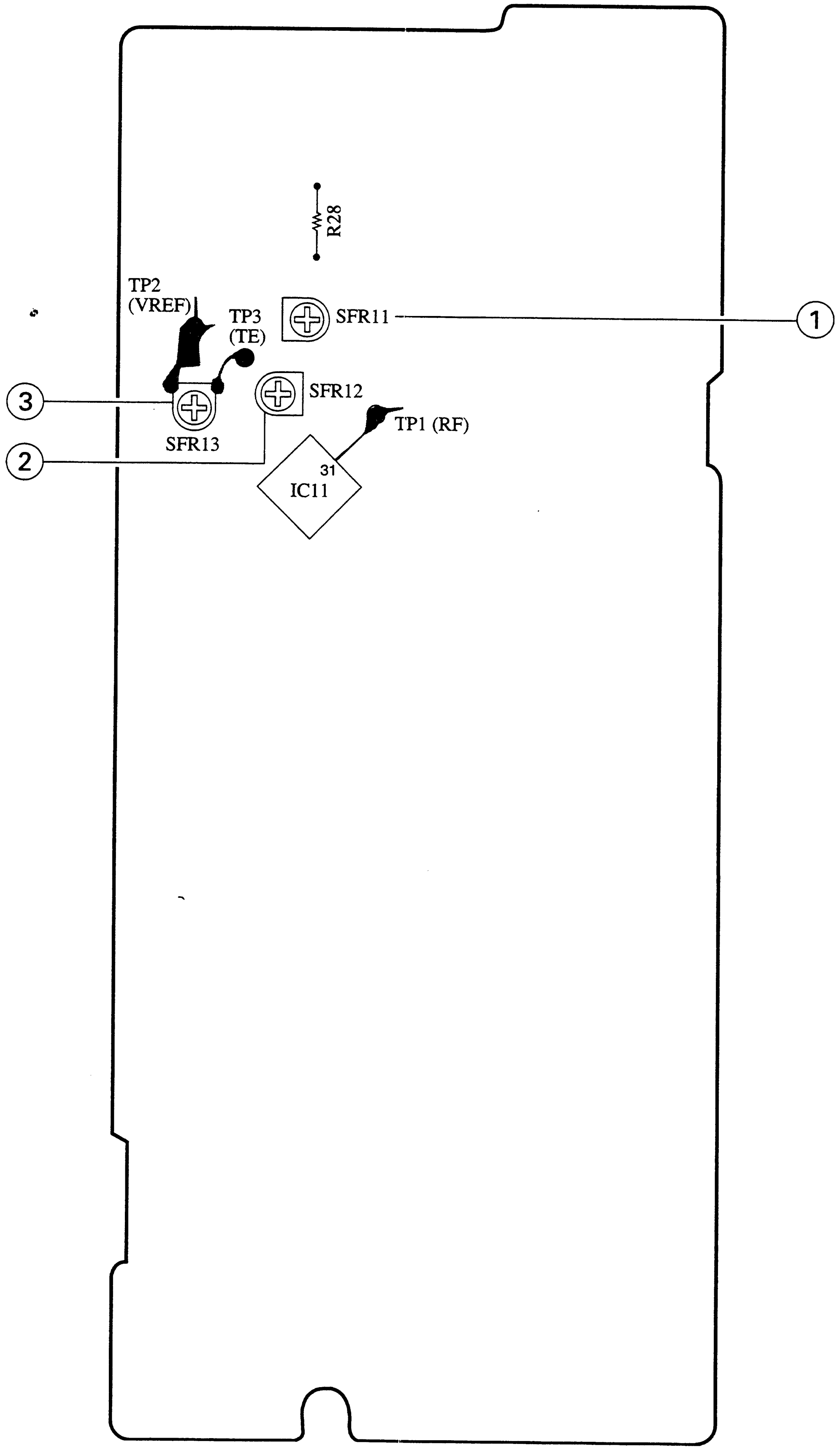
VOLT/DIV: 50mV
TIME/DIV: 1mS

トラッキングゲインが高い時
(ゲインが低い時と比べて基本波が高い)



VOLT/DIV: 50mV
TIME/DIV: 1mS

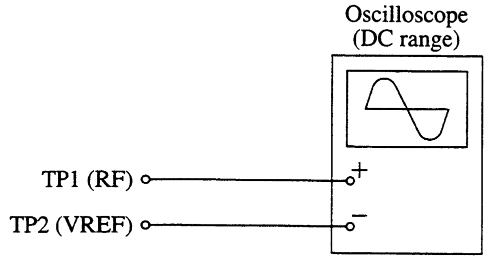
CD MAIN C.B (PATTERN SIDE)


R28
TP2
(VREF)
TP3
(TE)
SFR11
①
③
SFR12
TP1 (RF)
②
SFR13
31
IC11

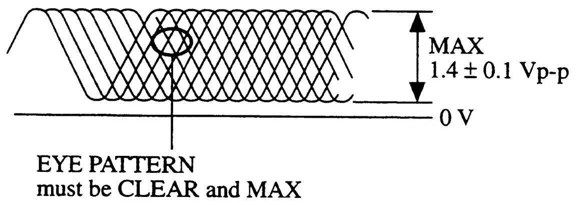
Note: • Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
• During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

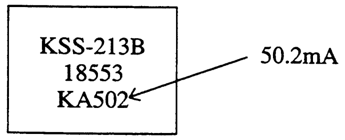

Oscilloscope
(DC range)
TP1 (RF)
TP2 (VREF)
+
–

1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR11 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.


MAX
1.4 ± 0.1 Vp-p
0 V
EYE PATTERN
must be CLEAR and MAX

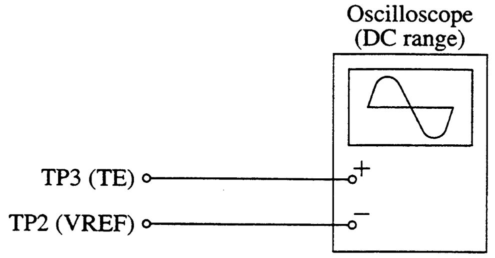
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R28 (10Ω). The difference for the specified value shown on the level must be within±6.0mA.

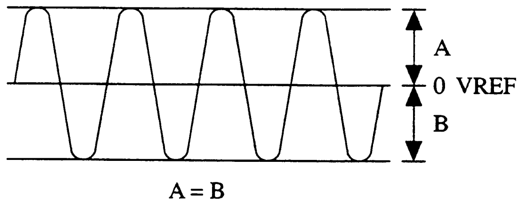

KSS-213B
18553
KA502
50.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R28}}{10\Omega}$$

2. Tracking Balance Adjustment


Oscilloscope
(DC range)
TP3 (TE)
TP2 (VREF)
+
–

1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR13 to decrease the tracking gain..
5) Adjust SFR12 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

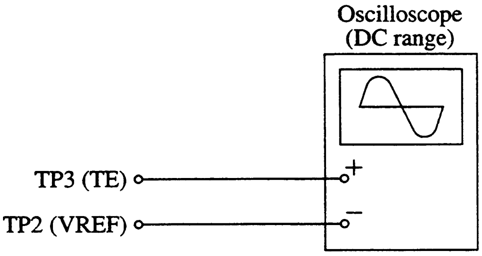
Gain Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP →▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

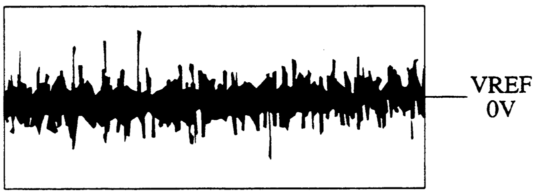
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



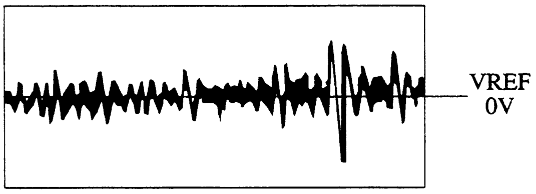
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF).
4) Adjust SFR13 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

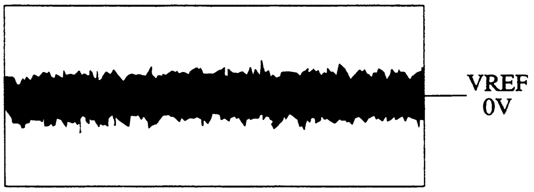
● Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



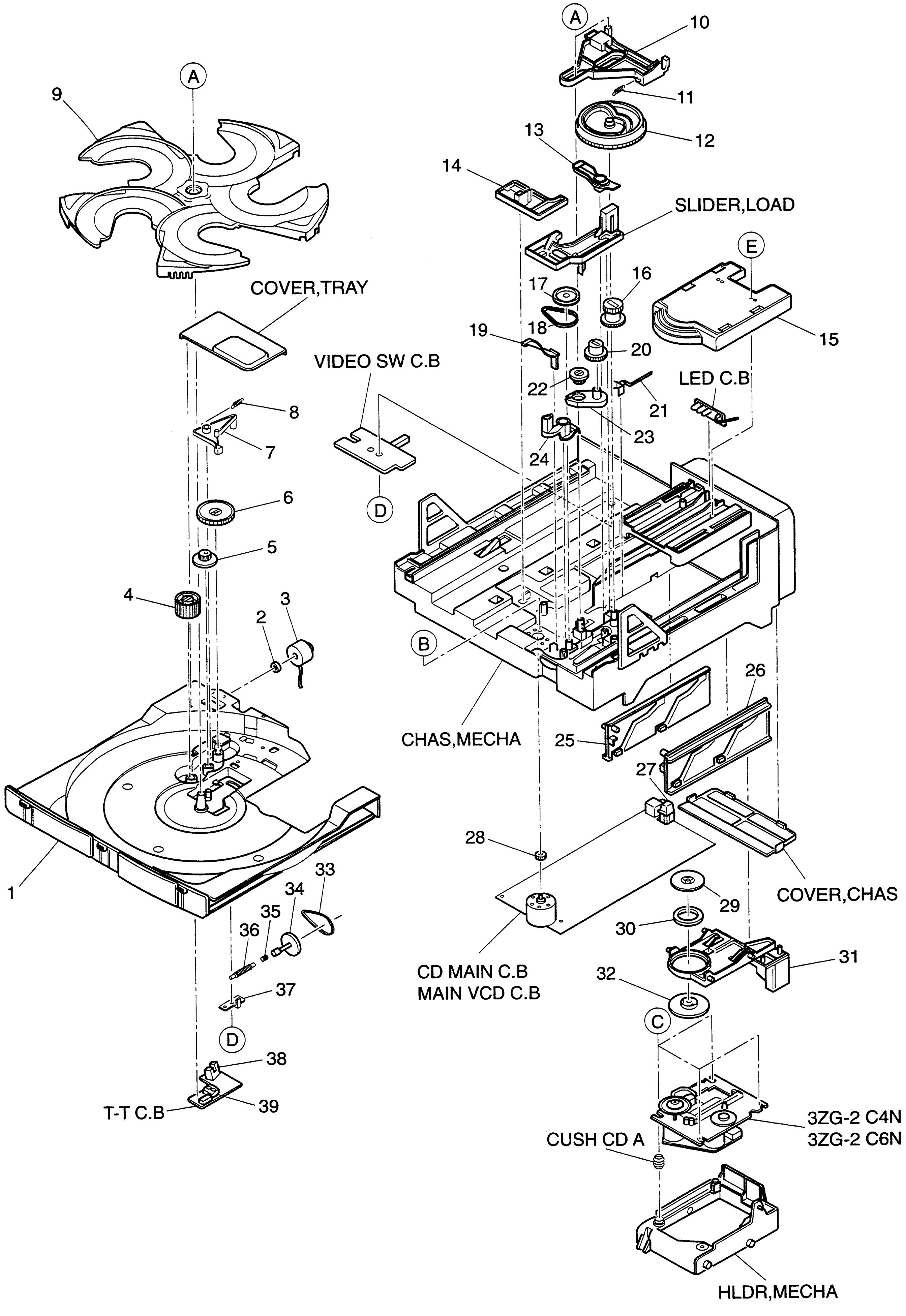
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1/1

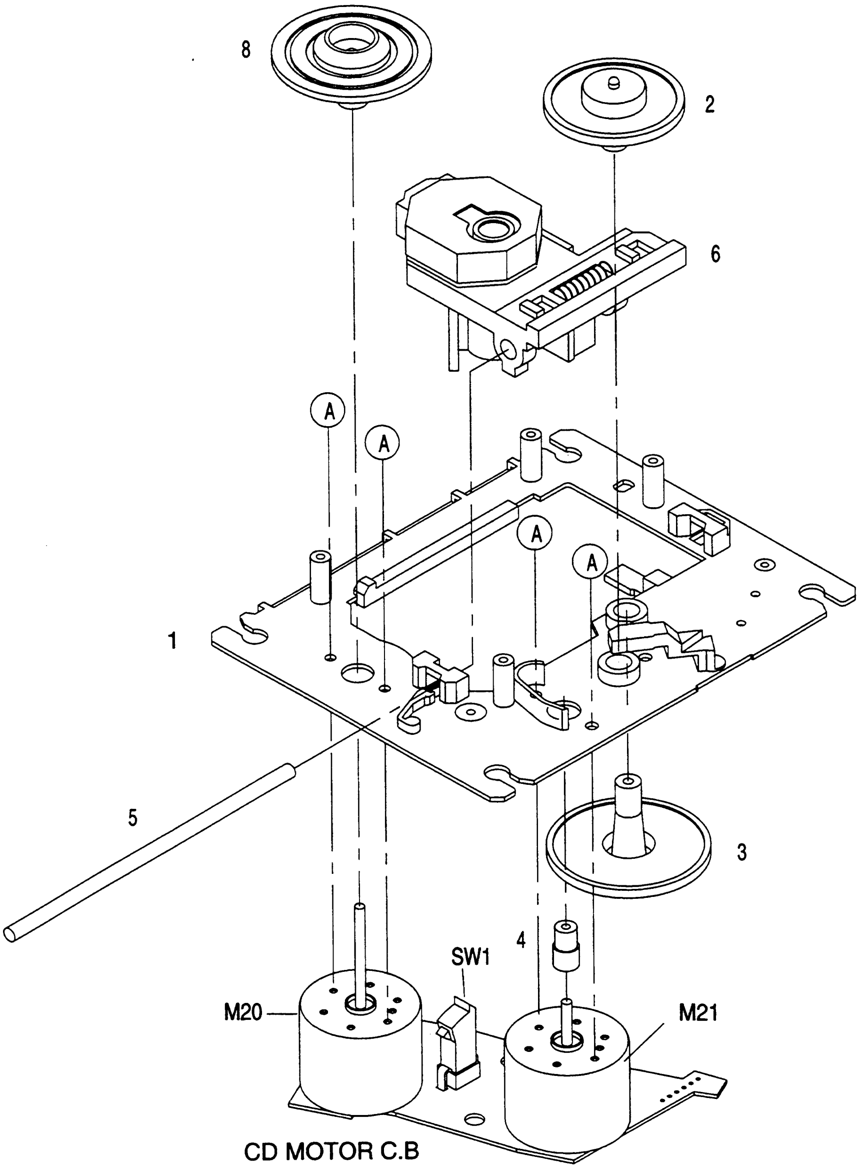

A
9
A
10
11
12
13
14
SLIDER,LOAD
E
16
17
18
15
COVER,TRAY
19
20
VIDEO SW C.B
LED C.B
22
21
8
23
7
24
D
6
5
4
3
2
B
CHAS,MECHA
26
25
27
28
1
33
34
35
36
29
COVER,CHAS
30
31
32
CD MAIN C.B
MAIN VCD C.B
37
C
D
38
T-T C.B
39
CUSH CD A
3ZG-2 C4N
3ZG-2 C6N
HLDR,MECHA

MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZG1-001-310	2M	TRAY,5CD
2	81-ZG1-212-010	0E	PULLY,LOAD MO
3	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
4	86-ZG1-228-110	0E	GEAR,TT-B
5	86-ZG1-227-110	0E	GEAR,TT-A
6	86-ZG1-223-110	0E	GEAR,WORM-WHEEL TT
7	86-ZG1-224-110	0E	LEVER,TT
8	86-ZG1-226-010	0E	SPR-E,LEVER TT
9	86-ZG1-002-210	2A	TURN TABLE,5CD
10	86-ZG1-211-210	1B	JOINT,CAM
11	86-ZG1-216-010	0E	SPR-E,JT
12	86-ZG1-203-110	1B	GEAR,MAIN CAM
13	86-ZG1-213-110	0E	LEVER,LOAD
14	86-ZG1-214-110	0E	LEVER,PROTECT
15	86-ZG1-004-010	1B	REFLECTOR,CD
16	86-ZG1-205-110	0E	GEAR,TRAY
17	84-ZG1-207-010	0E	PULLEY,RELAY
18	84-ZG1-209-010	0E	BELT,SQ1.8-117.7
19	86-ZG1-217-010	0E	LEVER,SW
20	86-ZG1-206-110	0E	GEAR,RELAY B
21	86-ZG1-220-110	0E	SPR-P,LOCK
22	86-ZG1-204-110	0E	GEAR,RELAY A
23	86-ZG1-218-110	0E	PLATE,GEAR
24	86-ZG1-208-010	1A	LEVER,TRAY
25	86-ZG1-209-110	1B	SLIDER,CAM L(*)
26	86-ZG1-210-110	1B	SLIDER,CAM R(*)
27	84-ZG1-244-210	1A	CABI,OPTICAL<D>
28	84-ZG2-228-010	0E	PULLEY,MOT
29	83-ZG3-211-010	0E	PLATE,DISC
30	83-ZG3-602-010	1A	RING,MAG
31	86-ZG1-215-010	1B	HLDR,CHUCK
32	83-ZG3-212-010	0E	CAP,DISC<EXCEPT S>
32	86-ZG1-237-010	1A	HLDR,MAGNET 6ZG<S>
33	86-ZG1-225-010	0E	BELT,SQ1.2-32.9
34	86-ZG1-221-010	1A	PULLEY,TT
35	86-ZG1-231-010	0E	SPR-C,WORM
36	84-ZG1-256-010	1A	GEAR,WORM N2
37	86-ZG1-232-010	0E	SPR-P,WORM
38	86-ZG1-229-010	0E	HLDR,SENSOR
39	86-ZG1-230-010	0E	HLDR,DISC SENSOR
A	87-078-148-010	0E	VFT2+3-12(F10) BLK
B	87-251-072-410	0E	U+2.6-5
C	81-ZG1-254-010	0E	S-SCREW,MECH HLDR
D	87-067-579-010	0E	TAPPING SCREW, BVT2+3-8
E	87-067-703-010	0E	TAPPING SCREW, BVT2+3-10

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 C4N)



CD MECHANISM PARTS LIST 1/1 (3ZG-2 C4N)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-232-11K	--	O-SERT S ASSY,S5
2	83-ZG2-204-419	0E	GEAR,A
3	83-ZG2-205-219	0E	GEAR,B
4	83-ZG2-220-01K	0E	GEAR MOTOR 2
5	83-ZG2-207-119	1A	SHAFT,SLIDE
6	87-070-445-010	2C	PICK-UP,KSS-213B
8	83-ZG2-227-01K	--	TURN TABLE,C1
A	87-261-032-219	0E	SCREW V+2-3

MODEL NO. 6ZG-1 (D, F, G, V1, V2)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-002-783-110	2Y	IC,CXD2500BQ
	87-002-532-010	1C	IC,PQ05RF11
	87-017-825-010	1E	IC,GP1F32T<D>
	84-ZG1-669-010	2M	C-IC,MB89627R-361
	87-017-543-080	1A	IC,PST600D
	87-A20-255-040	1B	C-IC,SN74LV373NS
	87-A20-251-040	1H	C-IC,BR6265BF-N10SL
	87-A20-252-040	0E	C-IC,SN74LV00NS
	87-A20-253-040	0E	C-IC,SN74LV04NS
	87-A20-254-040	0E	C-IC,SN74LV32NS
	87-A20-244-010	3M	C-IC,CL484
	87-A20-200-040	2E	C-IC,HM514260CJ7/CLJ7
	84-ZG1-640-040	1H	C-IC,LH5317YR
	87-A20-256-040	1C	C-IC,PQ20VZ5U
	87-A20-247-010	2P	C-IC,BU1417AK
	87-A20-248-040	1H	C-IC,BU2173F
	87-A20-258-040	1H	C-IC,SM5877AM
	87-001-982-010	1C	IC,TA7291S
	87-017-745-010	2A	C-IC,CXA1782BQ
	87-A20-257-040	1H	C-IC,BA6791FP
TRANSISTOR			
	89-327-125-080	0E	C-TR,2SC2712GR
	89-113-625-080	0E	C-TR,2SA1362GR
	87-026-237-080	0E	C-TR,DTC124XK
	89-111-625-080	0E	C-TR,2SA1162GR
	87-026-470-080	1A	C-TR,HN1C03FB
	87-026-580-080	0E	C-TR,DTA123JK
	89-333-266-080	0E	C-TR,2SC3326B
	87-A30-117-010	1A	TR,2SA1357
	89-318-155-080	0E	TR,2SC1815GR
	87-026-223-080	0E	C-TR,DTC143TK
	89-421-722-380	0E	TR,2SD2172V/W
	89-320-011-080	0E	TR,2SC2001K
DIODE			
	87-020-027-080	0E	C-DIODE,1SS184
	87-A40-180-040	0E	C-DIODE,SB07-015C
	87-A40-196-080	0E	C-ZENER,UDZ6.2B
MAIN VCD C.B			
C101	87-010-197-080	0E	C-CAP,S 0.01-25 K B<D>
C102	87-010-550-040	0E	CAP,E 100-6.3 5L SRE<D>
C103	87-010-318-080	0E	C-CAP,S 47P-50 J CH<D>
C104	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C105	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C106	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C107	87-012-156-080	0E	C-CAP,S 220P-50 J CH GRM
C108	87-010-184-080	0E	C-CAP,S 3300P-50 K B
C109	87-010-194-080	0E	C-CAP,S 0.047-25 Z F
C111	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C112	87-012-358-080	0E	C-CAP,S 0.47-10 Z F
C113	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C114	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C115	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C119	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C121	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C130	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C201	87-010-499-040	0E	CAP,E 22-6.3 M 5L SRE
C203	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C204	87-010-316-080	0E	C-CAP,S 33P-50 J CH
C205	87-010-316-080	0E	C-CAP,S 33P-50 J CH
C206	87-010-499-040	0E	CAP,E 22-6.3 M 5L SRE
C207	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C208	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C209	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C210	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C211	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C301	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C302	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C303	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C304	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C305	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C306	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C307	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C308	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C309	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C310	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C311	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C312	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C313	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C314	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C315	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C316	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C320	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C321	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C322	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C323	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C324	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C402	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C403	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C404	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C405	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C406	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C407	87-010-371-080	0E	CAP,E 470-6.3 M SME
C408	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C409	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C410	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C412	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C413	87-010-314-080	0E	C-CAP,S 22P-50 J CH
C414	87-010-316-080	0E	C-CAP,S 33P-50 J CH
C415	87-010-499-040	0E	CAP,E 22-6.3 M 5L SRE
C416	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C418	87-010-197-080	0E	C-CAP,S 0.01-25 K B<V1>
C420	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C421	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C422	87-010-184-080	0E	C-CAP,S 3300P-50 K B
C423	87-010-175-080	0E	C-CAP,S 560P-50 J SL
C424	87-010-317-080	0E	C-CAP,S 39P-50 J CH
C425	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C426	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C488	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C501	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C502	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C505	87-010-313-080	0E	C-CAP,S 18P-50 J CH
C506	87-010-313-080	0E	C-CAP,S 18P-50 J CH
C507	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C508	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C509	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C510	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C511	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C512	87-010-498-040	0E	CAP,E 10-16 M 5L SRE
C513	87-010-498-040	0E	CAP,E 10-16 M 5L SRE
C514	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C515	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C516	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C601	87-010-060-040	0E	CAP,E 100-16 M 7L SRA
C602	87-010-432-040	1B	CAP,AS 10-16 M SC
C603	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C604	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C605	87-A10-222-040	1B	CAP,AS 22-10 OS
C606	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C607	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C616	87-010-552-040	0E	CAP,E 22-16 M 5L SRE
C651	87-010-101-080	0E	CAP,E 220-16 SME
C652	87-010-496-040	0E	CAP,E 3.3-50 M 5L SRE

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C653	87-010-496-040	0E	CAP,E 3.3-50 M 5L SRE
C701	87-010-313-080	0E	C-CAP,S 18P-50 J CH
C702	87-010-193-080	0E	C-CAP,S 0.033-25 Z F C2012
C703	87-010-993-080	0E	C-CAP,S 0.056-25 K B MK212
C704	87-010-993-080	0E	C-CAP,S 0.056-25 K B MK212
C705	87-016-463-080	0E	C-CAP,S 0.33-16 B
C707	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C708	87-010-805-080	0E	C-CAP,S 1-16 Z F
C709	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C710	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C711	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C712	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C713	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C714	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C715	87-012-141-080	0E	C-CAP,S 0.22-16 Z F
C716	87-010-186-020	0E	C-CAP,S 4700P-50 B
C717	87-012-141-080	0E	C-CAP,S 0.22-16 Z F
C718	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C719	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C720	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C721	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C722	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C723	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C725	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C726	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C727	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C728	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C729	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C731	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C733	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C734	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C735	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C736	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C737	87-010-805-080	0E	C-CAP,S 1-16 Z F
C738	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C751	87-016-081-080	0E	C-CAP,S 0.1-16 K R
FB401	83-XM1-617-080	0E	C-COIL,BK2125HM601<V2>
FB402	83-XM1-617-080	0E	C-COIL,BK2125HM601<V2>
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
J401	87-009-502-010	1A	JACK,PIN 1P YEL W/O SW<V1>
L101	87-005-204-080	0E	COIL,47UH K EL0606
L202	87-005-204-080	0E	COIL,47UH K EL0606
L301	87-005-204-080	0E	COIL,47UH K EL0606
L302	87-005-204-080	0E	COIL,47UH K EL0606

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
L303	87-005-204-080	0E	COIL,47UH K EL0606
L304	87-005-204-080	0E	COIL,47UH K EL0606
L401	87-005-196-080	0E	COIL,10UH K EL0606KSI
L402	87-005-781-080	0E	C-COIL, 47UH FLC32C
L404	87-005-190-080	0E	COIL,3.3UH K EL0606
L405	87-005-189-080	0E	COIL,2.7UH K EL0606
L601	87-005-469-080	0E	COIL,4.7UH J FLR50
L602	87-A50-095-010	1A	COIL,68UH RCR875D
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
R740	87-022-364-080	0E	C-RES,S 82K-1/10W F
R741	87-022-361-080	0E	C-RES,S 47K-1/10W F
R742	87-022-361-080	0E	C-RES,S 47K-1/10W F
R743	87-022-361-080	0E	C-RES,S 47K-1/10W F
R744	87-022-361-080	0E	C-RES,S 47K-1/10W F
R745	87-022-364-080	0E	C-RES,S 82K-1/10W F
S101	87-036-109-010	1A	SW,MICRO SPPB61
S102	87-036-109-010	1A	SW,MICRO SPPB61
S103	87-036-109-010	1A	SW,MICRO SPPB61
SFR101	87-024-175-080	0E	SFR,47K H RH0638C
SFR102	87-024-176-080	0E	SFR,100K H RH0638C
SFR103	87-024-175-080	0E	SFR,47K H RH0638C
X202	87-A70-027-080	1C	VIB,XTAL 8.0MHZ-100PPM
X401	87-A70-026-080	1C	VIB,XTAL 13.5MHZ-50PPM
X501	87-030-270-080	1C	VIB,XTAL 16.9344MHZ HC-49/U03

LED C.B<F>

LED701	87-017-733-080	0E	LED,SEL1250SM<F>
LED702	87-017-350-080	0E	LED,SEL1550CM<F>
LED703	87-017-733-080	0E	LED,SEL1250SM<F>

T-T C.B

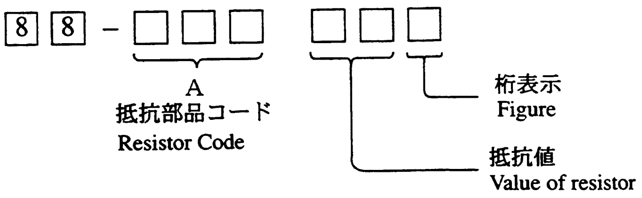
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

VIDEO SW C.B

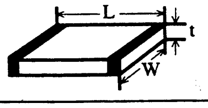
SW801	87-A90-238-010	1A	SW,SL 1-1-3 9L

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

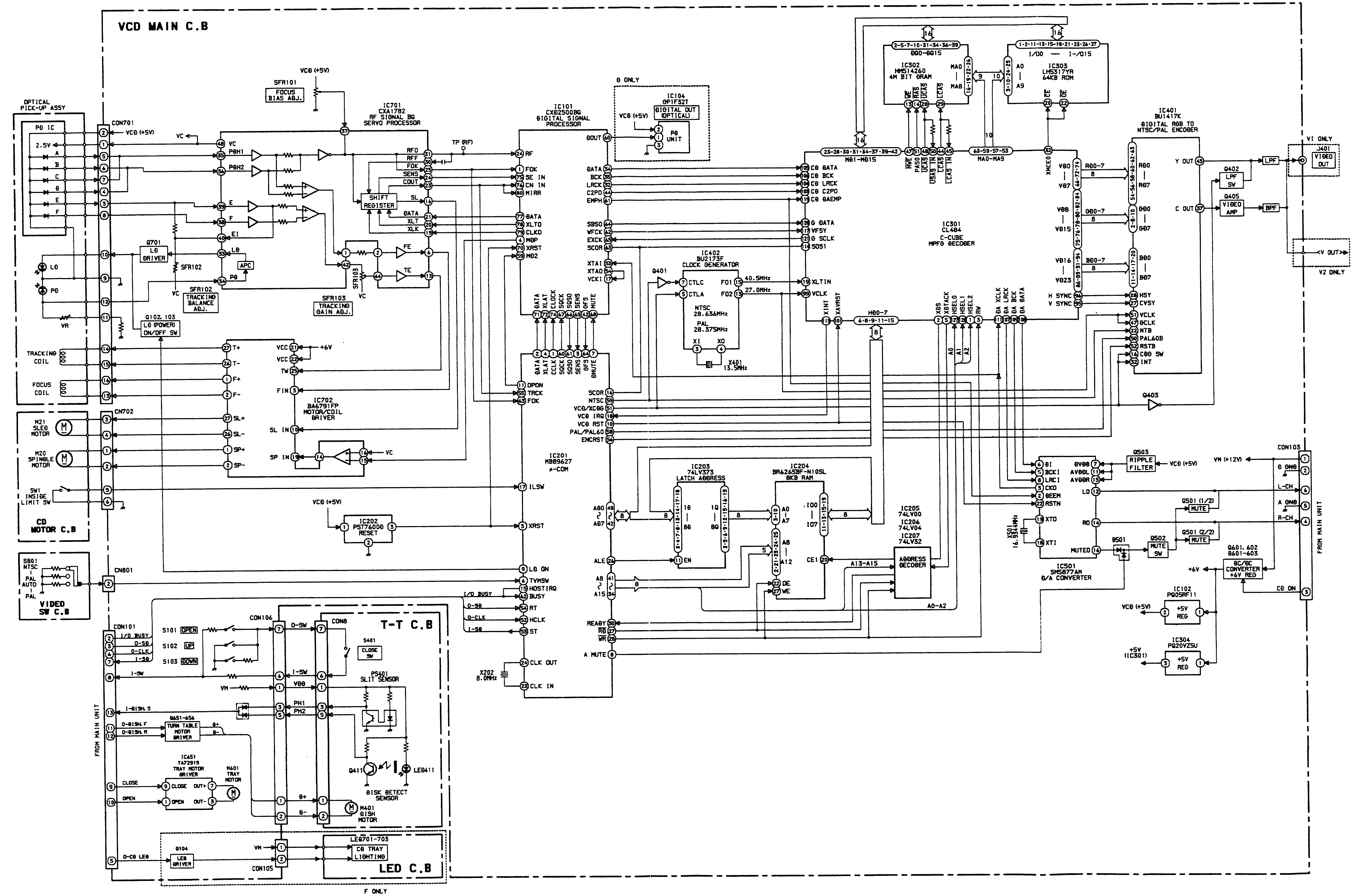
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

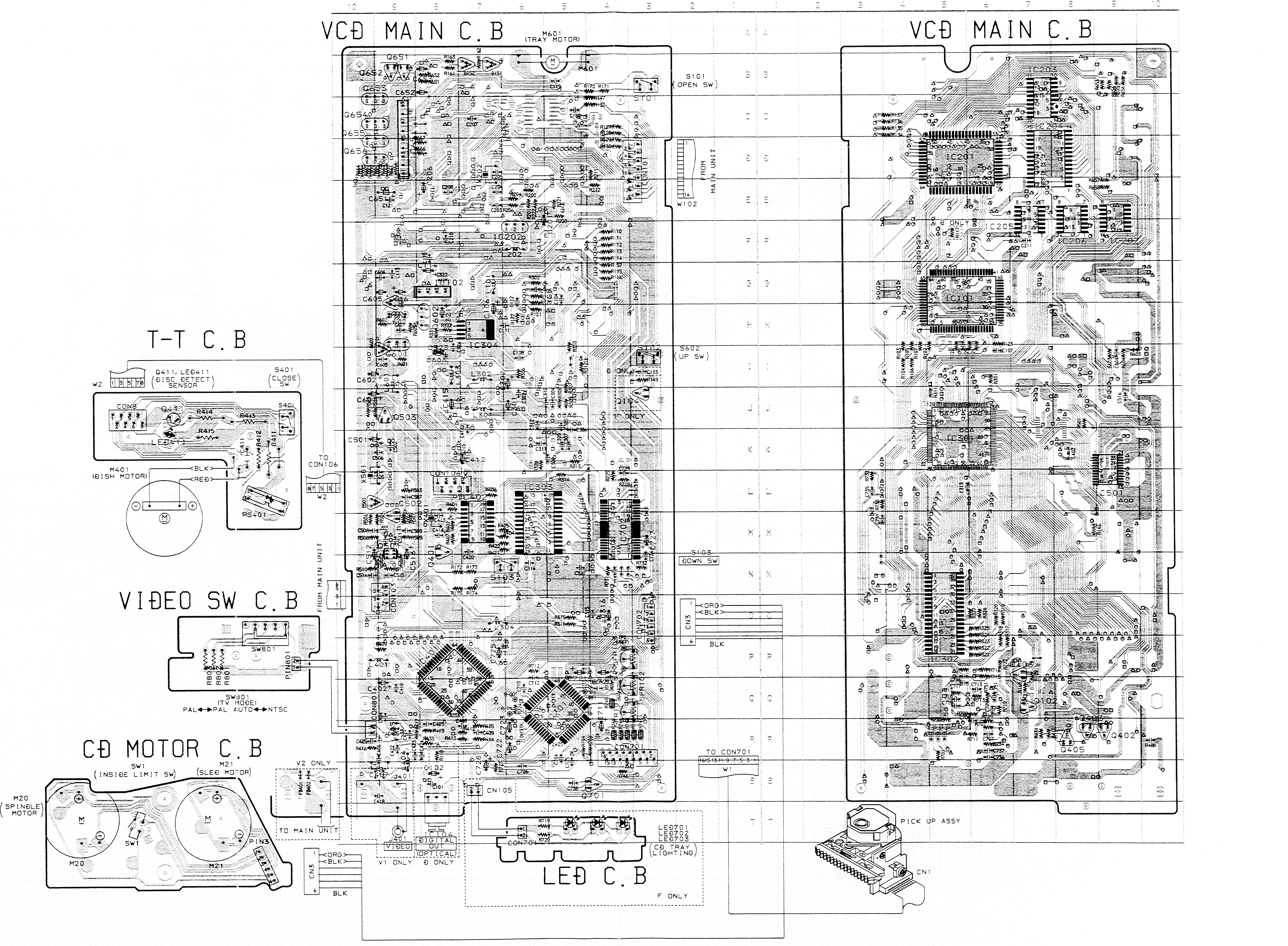


チップ抵抗
Chip resistor

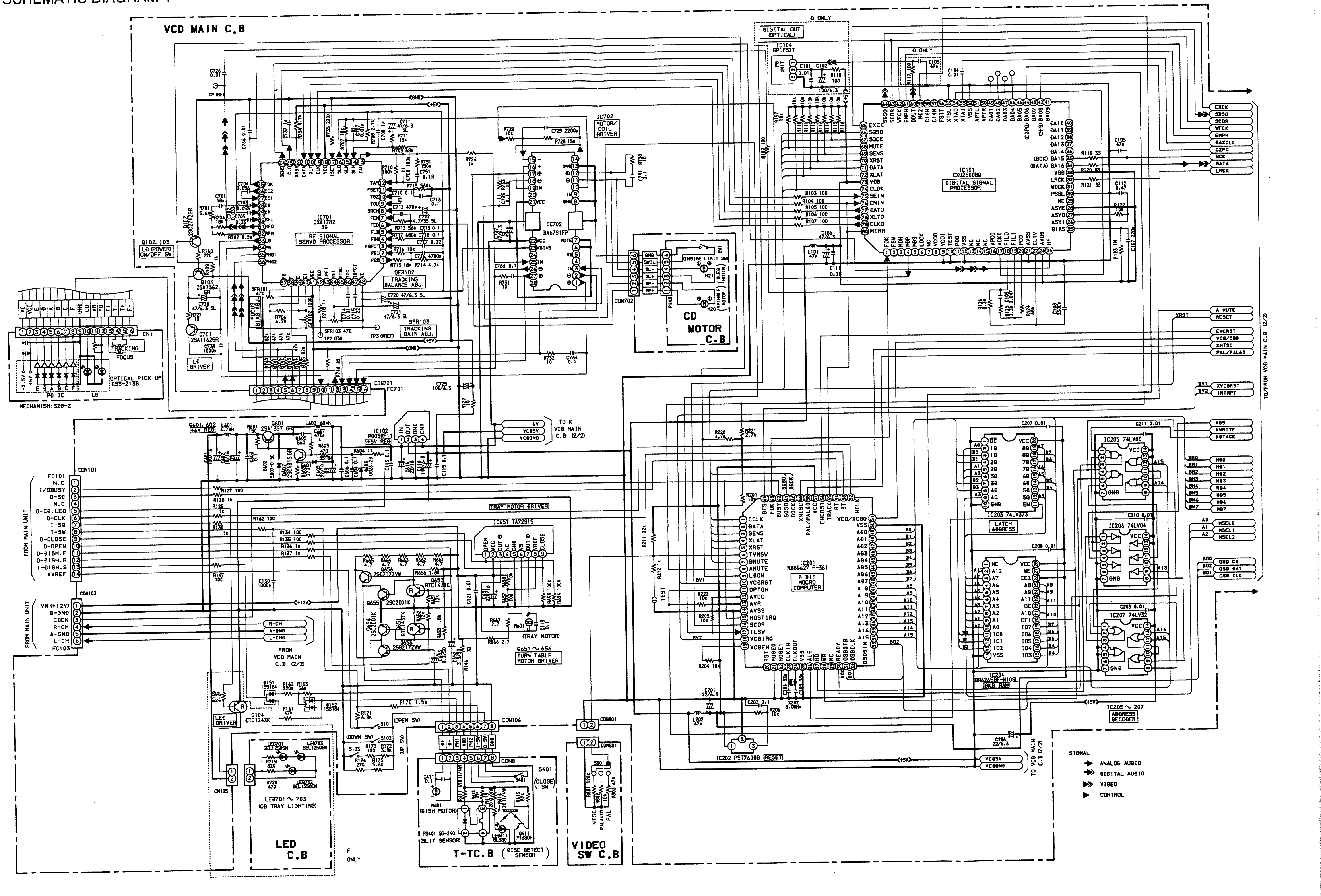
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード : A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

BLOCK DIAGRAM


VCD MAIN C.B
OPTICAL PICK-UP ASSY
PD IC
LD
PD
VR
TRACKING COIL
FOCUS COIL
CON701
CON702
M21 SLED MOTOR
M20 SPINDLE MOTOR
SW1 INSIDE LIMIT SW
CD MOTOR C.B
S801 NTSC PAL AUTO PAL
VIDEO SW C.B
CN801
SFR101 FOCUS BIAS ADJ.
Q701 LD DRIVER
SFR102
SFR102 TRACKING BALANCE ADJ.
Q102, 103 LD (POWER) ON/OFF SW
SFR103 TRACKING GAIN ADJ.
IC701 CXA1782 RF SIGNAL DQ SERVO PROCESSOR
SHIFT REGISTER
APC
TP (RF)
IC702 BA6791FP MOTOR/COIL DRIVER
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
D ONLY
IC104 GP1F32T DIGITAL OUT (OPTICAL)
PD UNIT
IC201 MB89627 µ-COM
IC202 PST7600D RESET
X202 8.0MHz
IC402 BU2173F CLOCK GENERATOR
Q401
NTSC 28.636MHz
PAL 28.375MHz
X401 13.5MHz
IC203 74LV373 LATCH ADDRESS
IC204 BR6265BF-N10SL 8KB RAM
IC205 74LV00
IC206 74LV04
IC207 74LV32
ADDRESS DECODER
IC302 HM514260 4M BIT DRAM
IC303 LH5317YR 64KB ROM
IC301 CL484 C-CUBE MPEG DECODER
IC401 BU1417K DIGITAL RGB TO NTSC/PAL ENCODER
Q402 LPF SW
Q405 VIDEO AMP
LPF
BPF
J401 VIDEO OUT
V1 ONLY
V2 ONLY
Q403
Q503 RIPPLE FILTER
IC501 SM5877AM D/A CONVERTER
X501 16.9344MHz
Q501 (1/2) MUTE
Q501 (2/2) MUTE
Q502 MUTE SW
Q601, 602 D601-603 DC/DC CONVERTER +6V REG
IC102 PQ05RF11 +5V REG
IC304 PQ20VZ5U +5V REG
CON103
FROM MAIN UNIT
CON101
CON106
S101 OPEN
S102 UP
S103 DOWN
Q651-656 TURN TABLE MOTOR DRIVER
IC651 TA7291S TRAY MOTOR DRIVER
M601 TRAY MOTOR
Q104 LED DRIVER
CON105
T-T C.B
CON8
S401 CLOSE SW
PS401 SLIT SENSOR
Q411
LED411
DISK DETECT SENSOR
M401 DISH MOTOR
LED701-703 CD TRAY LIGHTING
LED C.B
F ONLY


VCD MAIN C.B
M601
(TRAY MOTOR)
S101
(OPEN SW)
FROM MAIN UNIT
W102
S602
(UP SW)
S103
DOWN SW
CN3
<ORG>
<BLK>
BLK
TO CON701
W1
T-T C.B
Q411, LED411
(DISC DETECT SENSOR)
S401
(CLOSE SW)
W2
CON8
TO CON106
M401
(DISH MOTOR)
<BLK>
<RED>
VIDEO SW C.B
SW801
PIN801
SW801
(TV MODE)
PAL ↔ PAL AUTO ↔ NTSC
CD MOTOR C.B
SW1
(INSIDE LIMIT SW)
M21
(SLED MOTOR)
M20
(SPINDLE MOTOR)
PIN3
V2 ONLY
TO MAIN UNIT
J401
VIDEO
V1 ONLY
J102
DIGITAL OUT
(OPTICAL)
D ONLY
CN105
CON701
LED701
LED702
LED703
(CD TRAY LIGHTING)
LED C.B
F ONLY
PICK UP ASSY
CN1
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC101
IC301
IC302
IC303
IC304
IC401
IC402
IC701
IC702
Q651
Q652
Q653
Q654
Q655
Q656
Q101
Q102
Q401
Q402
Q405
Q406
Q501
Q502
Q503
Q701
C501
CON101
CON103
CON106
CON702
CON801

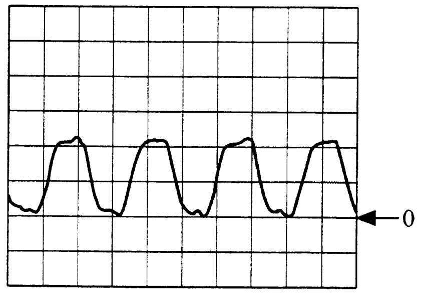
SCHEMATIC DIAGRAM-1


VCD MAIN C.B
IC701 CXA1782BQ
RF SIGNAL SERVO PROCESSOR
IC702 BA6791FP
IC702 MOTOR/COIL DRIVER
IC101 CXD2500BQ
DIGITAL SIGNAL PROCESSOR
IC104 GP1F32T
DIGITAL OUT (OPTICAL)
D ONLY
CD MOTOR C.B
SLED MOTOR
SPINDLE MOTOR
INSIDE LIMIT SW
Q102, 103 LD POWER ON/OFF SW
LD DRIVER
FOCUS BIAS ADJ.
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
OPTICAL PICK UP KSS-213B
MECHANISM:3Z0-2
PD IC
LD
FOCUS
TRACKING
CN1
CON701
FC701
IC102 PQ05RF11 +5V REG
Q601, 602 +6V REG
TO K VCD MAIN C.B (2/2)
FROM MAIN UNIT
CON101
FC101
CON103
FC103
FROM VCD MAIN C.B (2/2)
TRAY MOTOR DRIVER
IC651 TA7291S
Q651 ~ 656 TURN TABLE MOTOR DRIVER
(TRAY MOTOR)
IC201 MB89627 R-361
8 BIT MICRO COMPUTER
IC202 PST7600D RESET
IC203 74LV373
LATCH ADDRESS
IC204 BR6265BF-10SL
8KB RAM
IC205 74LV00
IC206 74LV04
IC207 74LV32
IC205 ~ 207 ADDRESS DECODER
TO/FROM VCD MAIN C.B (2/2)
TO VCD MAIN C.B (2/2)
LED DRIVER
LED701 ~ 703 (CD TRAY LIGHTING)
LED C.B
CN105
CON106
CON8
OPEN SW
DOWN SW
UP SW
S401 (CLOSE) SW
M401 (DISH MOTOR)
PS401 SG-240 (SLIT SENSOR)
T-TC.B (DISC DETECT SENSOR)
CON801
VIDEO SW C.B
NTSC PAL/AUTO PAL
F ONLY
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

WAVE FORM

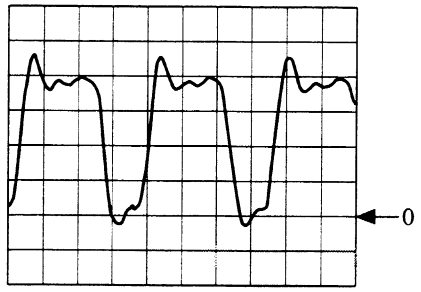
① IC301 Pin ⑲ (XTLIN)
40.5MHz
VCD PLAY
TV MODE • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



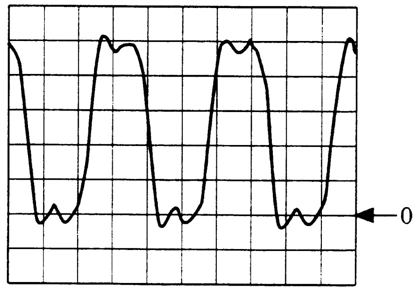
② IC301 Pin (99) (VCLK)
27MHz±1350Hz
VCD PLAY
TV MODE • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



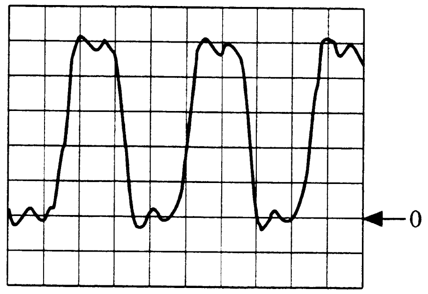
28.375MHz
CDG PLAY
TV MODE • PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS

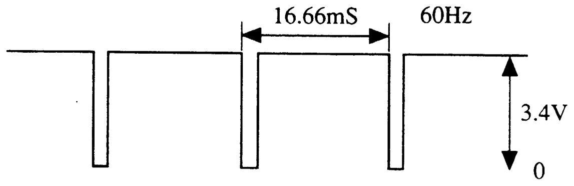


28.6363MHz
CDG PLAY
TV MODE • NTSC

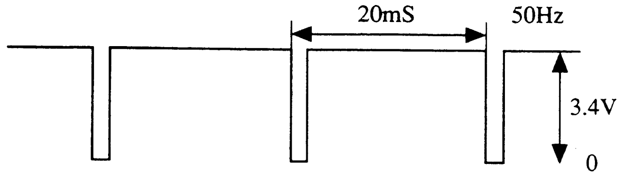
VOLT/DIV: 1V
TIME/DIV: 10nS



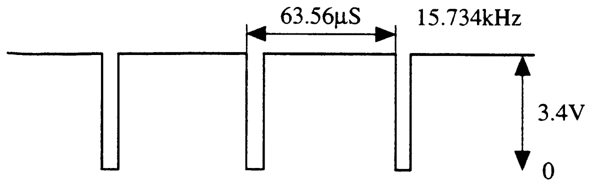
③ IC301 Pin (95) (V SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


16.66mS
60Hz
3.4V
0

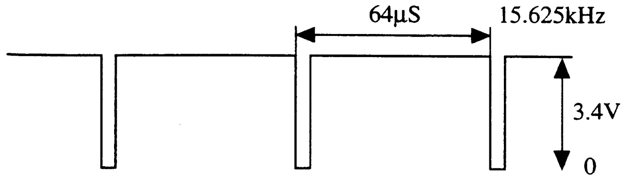
VCD, CDG PLAY
TV MODE: • PAL


20mS
50Hz
3.4V
0

④ IC301 Pin (96) (H SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO

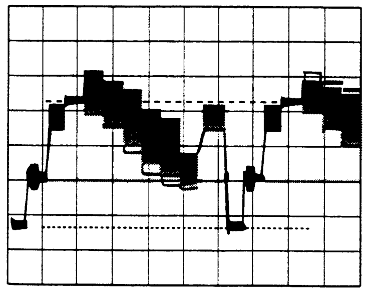

63.56μS
15.734kHz
3.4V
0

VCD, CDG PLAY
TV MODE: • PAL


64μS
15.625kHz
3.4V
0

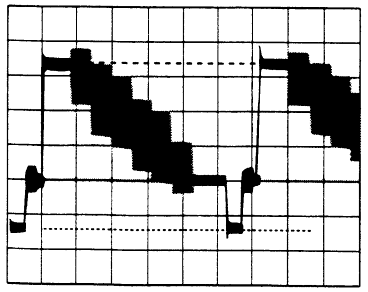
⑤ VIDEO OUT
C407 ⊖ side
CDG PLAY: CD-T03 TRACK2
TV MODE: • NTSC

VOLT/DIV: 200mV
TIME/DIV: 10μS

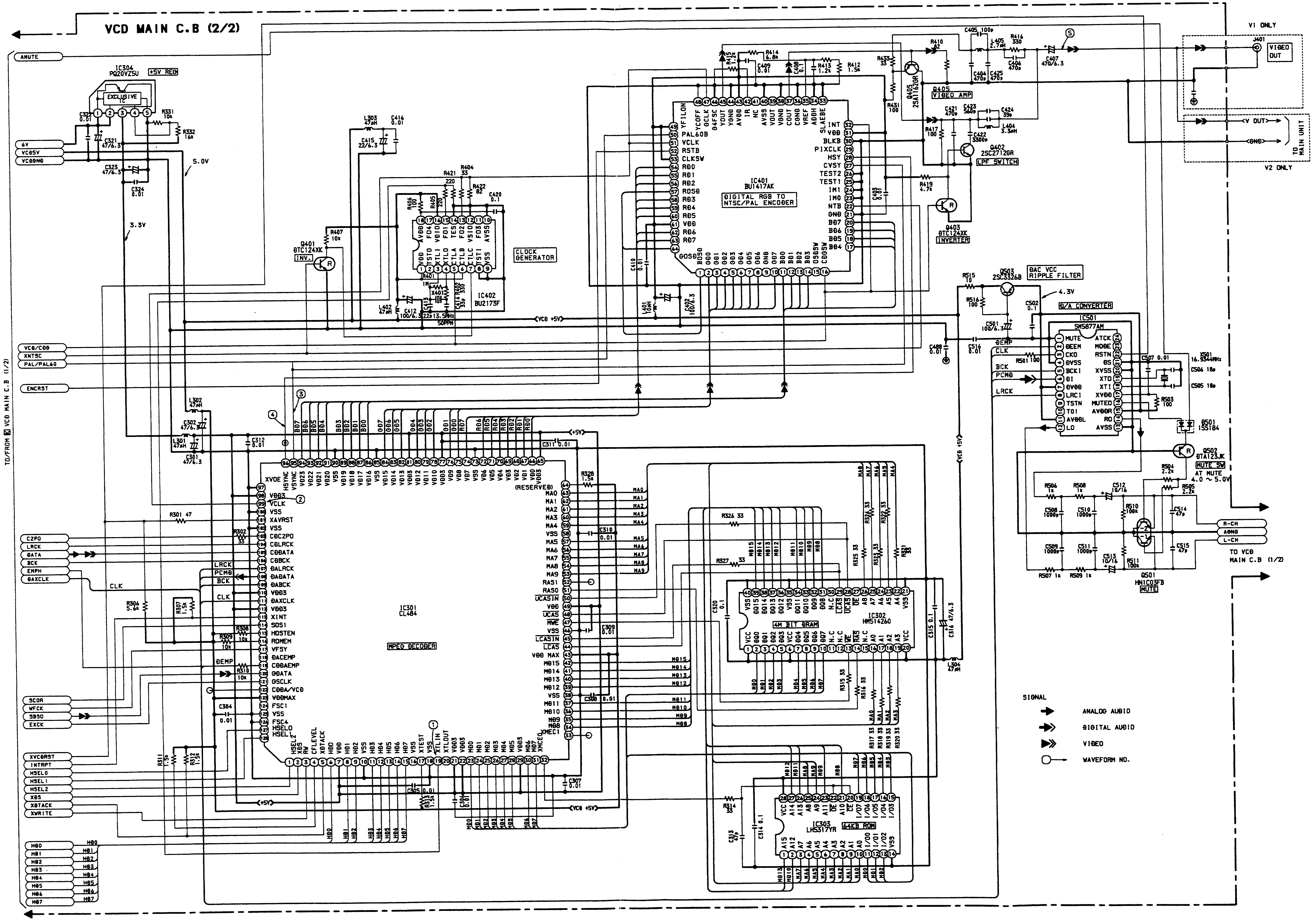


VCD PLAY: CD-T05 TRACK4
TV MODE: • NTSC

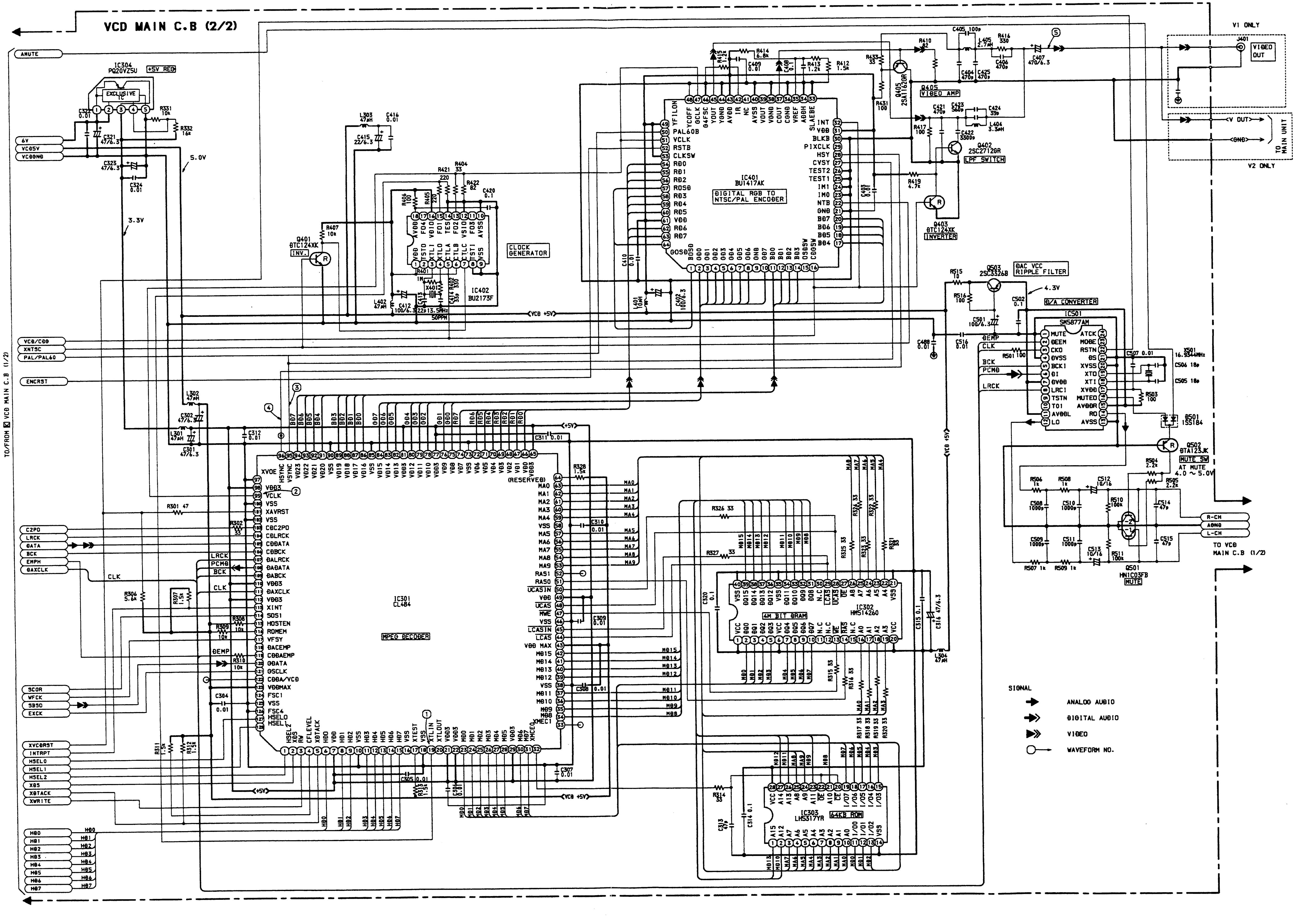
VOLT/DIV: 200mV
TIME/DIV: 10μS



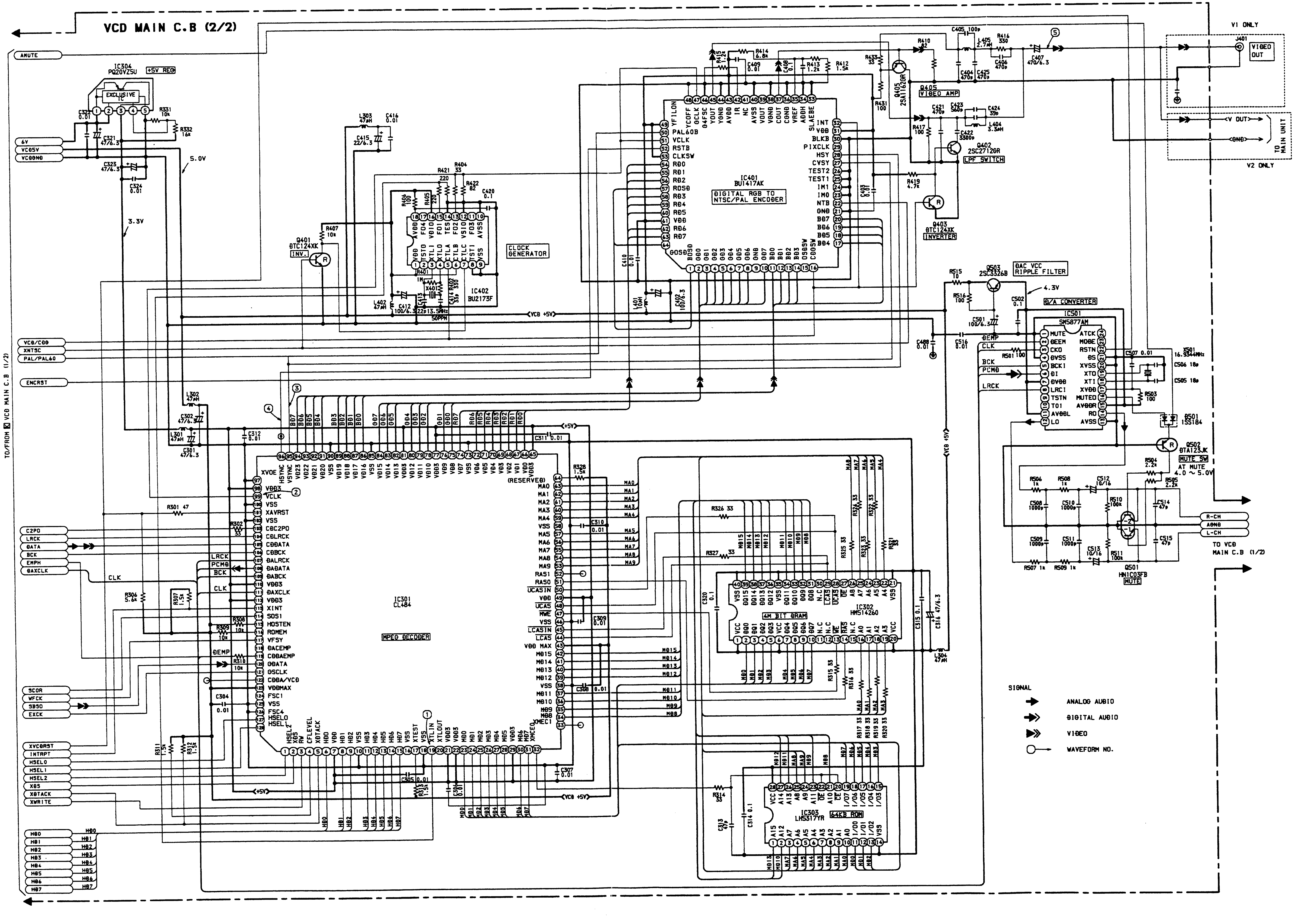
SCHEMATIC DIAGRAM-2


VCD MAIN C.B (2/2)
IC304 PQ20VZ5U
+5V REG
EXCLUSIVE IC
AMUTE
6V
VC05V
VC0GND
5.0V
3.3V
L303 47μH
C416 0.01
C415 22/6.3
R421 220
R404 33
R422 82
C420 0.1
CLOCK GENERATOR
IC402 BU2173F
Q401 DTC124XK
INV.
R407 10k
X401 13.5MHz 50PPM
L402 47μH
C412 100/6.3
VCD +5V
IC401 BU1417AK
DIGITAL RGB TO NTSC/PAL ENCODER
L401 10μH
C402 100/6.3
C410 0.01
Q405 2SA1162GR
VIDEO AMP
Q402 2SC2712GR
LPF SWITCH
Q403 DTC124XK
INVERTER
C405 100p
R410 82
R416 330
L405 2.7μH
C406 470p
C407 470/6.3
L404 3.3μH
C421 470p
C423 560p
C424 39p
C422 5500p
R417 100
R419 4.7k
R431 100
V1 ONLY
J401
VIDEO OUT
V OUT
GND
TO MAIN UNIT
V2 ONLY
Q503 2SC3326B
DAC VCC RIPPLE FILTER
4.3V
R515 10
R516 100
C502 0.1
C501 100/6.3
C516 0.01
C488 0.01
D/A CONVERTER
IC501 SM5877AM
MUTE
DEEM
CKO
DVSS
BCKI
DI
DVDD
LRCI
TSTN
TO1
AVDDL
LO
ATCK
MODE
RSTN
CS
XVSS
XTO
XTI
XVDD
MUTED
AVDDR
RO
AVSS
DEMP
CLK
BCK
PCMD
LRCK
R501 100
C507 0.01
X501 16.9344MHz
C506 18p
C505 18p
R503 100
D501 1SS184
Q502 DTA123JK
MUTE SW
AT MUTE 4.0 ~ 5.0V
R504 2.2k
R505 2.2k
R506 1k
R508 1k
C512 10/16
C508 1000p
C510 1000p
R510 100k
C514 47p
C509 1000p
C511 1000p
C513 10/16
R511 100k
C515 47p
R507 1k
R509 1k
Q501 HN1C03FB
MUTE
R-CH
AGND
L-CH
TO VCD MAIN C.B (1/2)
VCD/CDD
XNTSC
PAL/PAL60
ENCRST
TO/FROM VCD MAIN C.B (1/2)
L302 47μH
C302 47/6.3
L301 47μH
C301 47/6.3
C312 0.01
C311 0.01
IC301 CL484
MPEG DECODER
R328 1.5k
C310 0.01
C309 0.01
C308 0.01
C307 0.01
C305 0.01
C306 0.01
C304 0.01
R301 47
R302 33
R306 5.6k
R307 1.5k
R308 10k
R309 10k
R310 10k
R311 1.5k
R312 1.5k
R313 1.5k
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
CLK
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XBS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
+5V
VCD +5V
(RESERVED)
IC302 HM514260
4M BIT DRAM
R326 33
R327 33
C320 0.1
C315 0.1
C316 47/6.3
L304 47μH
IC303 LH5317YR
64KB ROM
R314 33
C313 47/6.3
C314 0.1
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVEFORM NO.

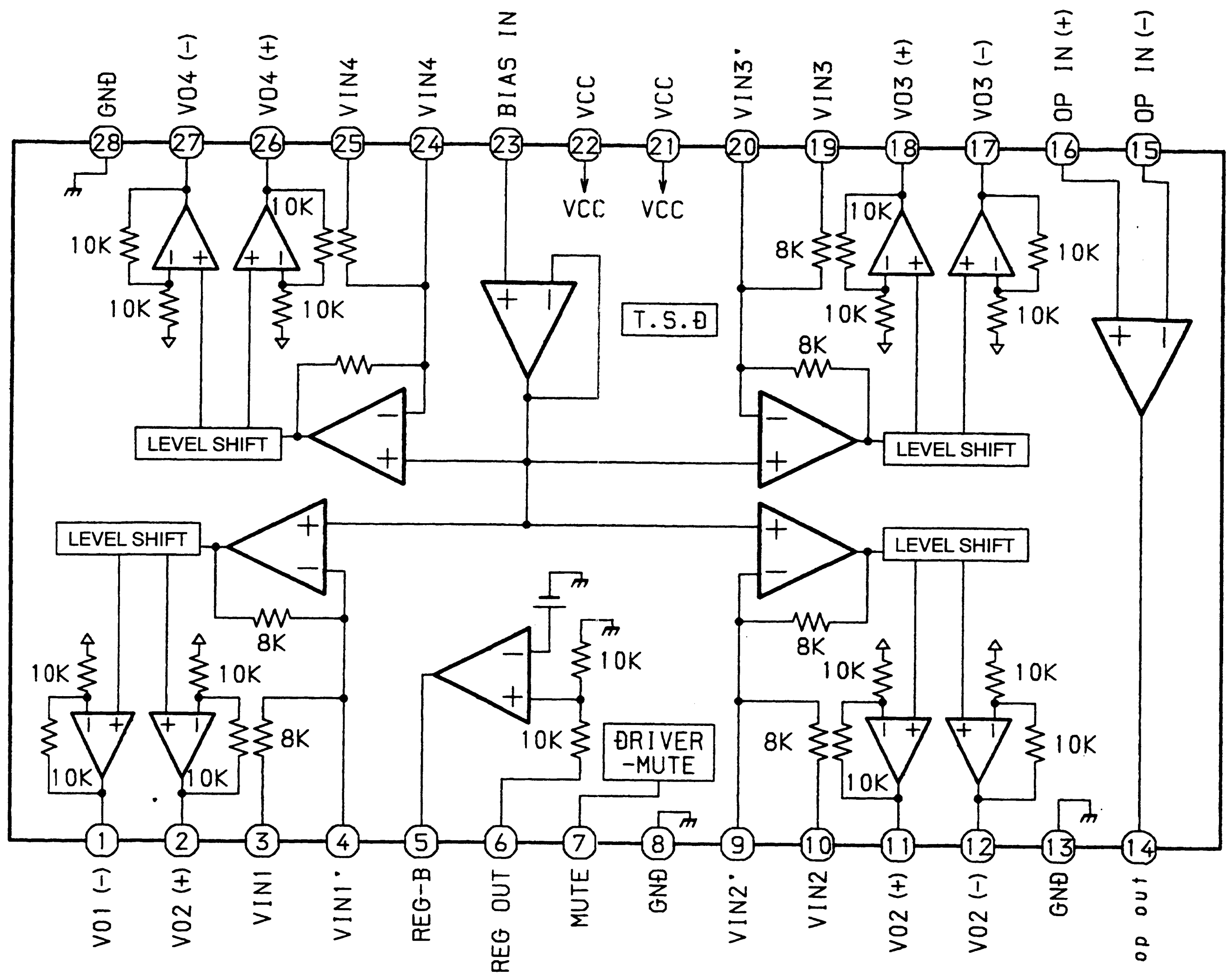
SCHEMATIC DIAGRAM-2


VCD MAIN C.B (2/2)
IC304 PQ20VZ5U
+5V REG
EXCLUSIVE IC
5.0V
3.3V
IC402 BU2173F
CLOCK GENERATOR
Q401 DTC124XK
INV.
IC401 BU1417AK
DIGITAL RGB TO NTSC/PAL ENCODER
Q405 2SA1162GR
VIDEO AMP
Q402 2SC2712GR
LPF SWITCH
Q403 DTC124XK
INVERTER
Q503 2SC3326B
DAC VCC RIPPLE FILTER
4.3V
D/A CONVERTER
IC501 SM5877AM
X501 16.9344MHz
D501 1SS184
Q502 DTA123JK
MUTE SW
AT MUTE 4.0 ~ 5.0V
Q501 HN1C03FB
MUTE
J401
VIDEO OUT
V1 ONLY
V2 ONLY
V OUT
GND
TO MAIN UNIT
R-CH
AGND
L-CH
TO VCD MAIN C.B (1/2)
TO/FROM VCD MAIN C.B (1/2)
IC301 CL484
MPEG DECODER
IC302 HM514260
4M BIT DRAM
IC303 LH5317YR
64KB ROM
AMUTE
6V
VCD5V
VCDGND
VCD/CDG
XNTSC
PAL/PAL60
ENCRST
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XCS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
VCD +5V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVEFORM NO.

SCHEMATIC DIAGRAM-2


VCD MAIN C.B (2/2)
TO/FROM VCD MAIN C.B (1/2)
AMUTE
IC304 PQ20VZ5U +5V REG
EXCLUSIVE IC
6V
VC05V
VCDGND
5.0V
3.3V
IC401 BU1417AK
DIGITAL RGB TO NTSC/PAL ENCODER
IC402 BU2173F
CLOCK GENERATOR
Q401 DTC124XK INV.
X401 13.5MHz 50PPM
Q405 2SA1162GR VIDEO AMP
Q402 2SC2712GR LPF SWITCH
Q403 DTC124XK INVERTER
Q503 2SC3326B DAC VCC RIPPLE FILTER
4.3V
D/A CONVERTER
IC501 SM5877AM
X501 16.9344MHz
D501 1SS184
Q502 DTA123JK MUTE SW AT MUTE 4.0 ~ 5.0V
Q501 HN1C03FB MUTE
V1 ONLY
J401 VIDEO OUT
V OUT
GND
V2 ONLY
TO MAIN UNIT
R-CH
AGND
L-CH
TO VCD MAIN C.B (1/2)
VCD/CDG
XNTSC
PAL/PAL60
ENCRST
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XDS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
IC301 CL484
MPEG DECODER
IC302 HM514260
4M BIT DRAM
IC303 LH5317YR
64KB ROM
VCD +5V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVEFORM NO.

IC BLOCK DIAGRAM
IC, BA6791FP


GND
VO4 (-)
VO4 (+)
VIN4
VIN4
BIAS IN
VCC
VCC
VIN3'
VIN3
VO3 (+)
VO3 (-)
OP IN (+)
OP IN (-)
28
27
26
25
24
23
22
21
20
19
18
17
16
15
VCC
VCC
10K
10K
10K
10K
8K
10K
8K
10K
10K
10K
T.S.D
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
8K
8K
10K
10K
10K
10K
8K
10K
10K
DRIVER -MUTE
8K
10K
10K
10K
10K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
VO1 (-)
VO2 (+)
VIN1
VIN1'
REG-B
REG OUT
MUTE
GND
VIN2'
VIN2
VO2 (+)
VO2 (-)
GND
op out

共通部分は、下記のページを参照して下さい。
Refer to the following pages for the common section.

- ■ IC DESCRIPTION
  CXA1782BQ.. 24ページ参照
  See page 28
- ■ IC BLOCK DIAGRAM
  TA7291S 23ページ参照
  See page 23
- ■ MECHANICAL EXPLODED VIEW/PARTS LIST
  40ページ参照
  See page 40

IC DESCRIPTION
IC, CXD2500BQ

端子番号	端子名称	I/O	機能説明
1	FOK	I	フォーカスOK入力端子。SENS出力と、サーボ·オートシーケンサに用いる。
2	FSW	O	スピンドルモータの出力フィルタ切り換え出力。
3	MON	O	スピンドルモータのON-OFFコントロール出力。
4	MDP	O	スピンドルモータのサーボ制御。
5	MDS	O	スピンドルモータのサーボ制御。
6	LOCK	O	GFSを、460Hzでサンプリングし、GFSが“H”の時H出力。8回連続“L”の場合“L”出力。
7	NC	—	未使用。
8	VCOO	O	アナログEFM PLL用発振回路出力。
9	VCOI	I	アナログEFM PLL用発振回路入力。fLOCK=8.6436MHz
10	TEST	I	TEST用端子通常GND。
11	PDO	O	アナログEFM PLL用チャージポンプ出力。
12	VSS	—	GND
13	NC	—	未使用。
14	NC	—	未使用。
15	NC	—	未使用。
16	VPCO	O	バリピッチ用PLLチャージポンプ出力。
17	VCKI	I	バリピッチ用外付VCOからの、クロック入力。fc center=16.9344MHz
18	FILO	O	マスターPLL用 (スレーブ=デジタルPLL) フィルター出力。
19	FILI	I	マスターPLL用フィルター入力。
20	PCO	O	マスターPLL用チャージポンプ出力。
21	AVSS	—	アナログGND。
22	CLTV	I	マスター用VCOコントロール電圧入力。
23	AVDD	—	アナログ電源。(+3.5V)
24	RF	I	EFM信号入力。
25	BIAS	I	アシンメトリー回路定電流入力。
26	ASYI	I	アシンメトリーコンパレート電圧入力。
27	ASYO	O	EFMフルスイング出力 (L=VSS, H=VDD)
28	ASYE	I	L: アシンメトリー回路OFF H: アシンメトリー回路ON。
29	NC	—	未使用。
30	PSSL	I	オーディオデータ出力モード切換入力。“L”でシリアル出力“H”でパラレル出力。
31	WDCK	O	48ビットスロット用D/Aインターフェース。ワードクロック f=2Fs
32	LRCK	O	48ビットスロット用D/Aインターフェース。LRクロック f=Fs
33	VDD		電源 (+3.5V)。
34	S DATA	O	PSSL=“H”の時DA16 (MSB) 出力。PSSL=“L”の時48ビットスロットのシリアルデータ。(2s' COMP, MSBファースト)
35	BCLK	O	PSSL=“H”の時DA15出力。PSSL=“L”の時48ビットスロットのビットクロック。
36	NC	O	PSSL=“H”の時DA14出力。PSSL=“L”の時64ビットスロットのシリアルデータ。(2s' COMP, MSBファースト)

端子番号	端子名称	I/O	機能説明
37	NC	O	PSSL= “H” の時DA13出力。PSSL= “L” の時64ビットスロットのビットクロック。
38	NC	O	PSSL= “H” の時DA12出力。PSSL= “L” の時64ビットスロットのLRクロック。
39	GTOP	O	PSSL= “H” の時DA11出力。PSSL= “L” の時GTOP出力。
40	XUGF	O	PSSL= “H” の時DA10出力。PSSL= “L” の時XUGF出力。
41	XPLCK	O	PSSL= “H” の時DA09出力。PSSL= “L” の時XPLCK出力。
42	GFS	O	PSSL= “H” の時DA08出力。PSSL= “L” の時GFS出力。
43	RFCK	O	PSSL= “H” の時DA07出力。PSSL= “L” の時RFCK出力。
44	C2PO	O	PSSL= “H” の時DA06出力。PSSL= “L” の時C2P0出力。
45	XRAOF	O	PSSL= “H” の時DA05出力。PSSL= “L” の時XRAOF出力。
46	MNT3	O	PSSL= “H” の時DA04出力。PSSL= “L” の時MNT3出力。
47	MNT2	O	PSSL= “H” の時DA03出力。PSSL= “L” の時MNT2出力。
48	MNT1	O	PSSL= “H” の時DA02出力。PSSL= “L” の時MNT1出力。
49	MNT0	O	PSSL= “H” の時DA01出力。PSSL= “L” の時MNT0出力。
50	APTR	O	アパーチャー補正用コントロール出力。Rchの時 “H” 。
51	APTL	O	アパーチャー補正用コントロール出力。Lchの時 “H” 。
52	VSS	—	GND
53	XTAI	I	16.9344MHzのXtal発振回路入力。又は33.8688MHz入力。
54	XTAO	O	16.9344MHzのXtal発振回路出力。
55	XTSL	I	Xtal選択入力端子。Xtalが、16.9344MHzの時 “L” 。33.8688MHzの時 “H” にする。
56	FSTT	O	53, 54端子の、2/3分周出力。バリピッチで変化しない。
57	C4M	O	4.2336MHz出力。バリピッチされた時、同時に変化する。
58	C16M	O	16.2336MHz出力。バリピッチされた時、同時に変化する。
59	MD2	I	Digital-Out ON/OFFコントロール、“H” でON、“L” でOFFする。
60	DOUT	O	Digital-Out出力端子。
61	EMPH	O	再生Discがエンファシス有りの時 “H” 出力。無しの時 “L” 出力。
62	WFCK	O	WFCK (Write Frame Clock) 出力。
63	SCOR	O	サブコードシンクS0かS1どちらか検出された時 “H” 出力。
64	SBSO	O	SubP～Wのシリアル出力。
65	EXCK	I	SBSOリード･アウト用、クロック入力。
66	SQSO	O	SubQ 8bit及びPCMピーク、レベルデータ16bit出力。
67	SQCK	I	SQSOリード･アウト用、クロック入力。
68	MUTE	I	“H” でミュート。“L” で解除。
69	SENS	O	SENS出力。CPUへ出力。
70	XRST	I	システムリセット。“L” でリセット。
71	DATA	I	CPUより、シリアルデータ入力。
72	XLAT	I	CPUより、ラッチ入力。立下がりで、シリアルデータをラッチ。
73	VDD	—	電源 (+3.5V)
74	CLOK	I	CPUより、シリアルデータ転送クロック入力。
75	SEIN	I	SSPより、センサ入力。

端子番号	端子名称	I/O	機　能　説　明
76	CNIN	I	トラックジャンプ数カウント信号入力。
77	DATO	O	SSPへシリアルデータ出力。
78	XLTO	O	SSPへシリアルデータラッチ出力。立下がりでラッチ。
79	CLKO	O	SSPへシリアルデータ転送クロック出力。
80	MIRR	I	ミラー信号入力。オートシーケンサで、128トラック以上のジャンプに使う。

IC, SM5877AM

端子番号	端子名称	I/O	機能説明
1	MUTE	I	MODE＝H: ソフトミュートON/OFF端子。(Hでミュート) MODE＝L: アッテネータレベルDOWN/UP端子。(HでDOWN)
2	DEEM	I	ディエンファシスON/OFF端子。(HでディエンファシスON)
3	CKO	O	発振部クロック出力。(16.9344MHz)
4	DVSS	—	ディジタルVSS端子。
5	BCKI	I	ビットクロック入力端子。
6	DI	I	シリアルデータ入力端子。
7	DVDD	—	ディジタルVDD端子。
8	LRCI	I	サンプルレートクロック (fs) 入力端子。(H＝Lch/L＝Rch)
9	TSTN	I	LSIのテスト用入力。(Lでテスト)
10	TO1	O	テスト用出力1。(通常時Lowレベル出力)
11	AVDDL	—	アナログVDD端子。(L-ch用)
12	LO	O	L-chアナログ出力端子。
13	AVSS	—	アナログVSS端子。
14	RO	O	R-chアナログ出力端子。
15	AVDDR	—	アナログVDD端子。(R-ch用)
16	MUTEO	O	インフィニティ・ゼロ検出出力。
17	XVDD	—	X'tal系VDD端子。
18	XTI	I	X'tal発振端子。(又は、外部クロック入力端子16.9344MHz)
19	XTO	O	X'tal発振端子。
20	XVSS	—	X'tal系VSS端子。
21	DS	I	倍速／ノーマル再生モード選択。(Hで倍速再生)
22	RSTN	I	リセット端子。(Lでリセット)
23	MODE	I	ソフトミュート／アッテネータモード選択。(Hでソフトミュートモード)
24	ATCK	I	アッテネータレベル設定クロック。(MODE＝Hの時は、無視)

IC, MB89627

端子番号	端子名称	I/O	機能説明
1	CCLK	O	SSP、DSPコントロールクロック。
2	DATA	O	SSP、DSPコントロールクデータ。
3	SENS	I	SSP、DSPステータス。
4	XLAT	O	SSP、DSPコマンドラッチ。
5	XRST	O	SSP、DSPリセット。
6	TVMSW	O	OFF／NTSC／PAL／PAL60 AUTO／AUTO／TEST。 *注参照。
7	DMUTE	O	ディジタルミュート。
8	AMUTE	O	アナログミュート。
9	LDON	O	サーボ基板電源ON。
10	VCDRST	O	ビデオCDリセット。
11	OPTON	O	光学ディジタル出力ON。
12	VCC	—	A／DコンバータVcc。
13	VCC	—	A／DコンバータVref。
14	VSS	—	A／DコンバータVss。
15	HOSTIRQ	I	ホストCPUインタラプトリクエスト。
16	SCOR	I	サブコードシンク0 (サブコードIRQ)。
17	ILSW	I	内側リミットスイッチ。
18	VCDIRQ	I	ビデオCDデコーダインタラプトリクエスト。
19	N. C.	—	未使用。
20	RST	I	CPUリセット。
21	MODE0	I	CPUモード(プルダウン)。
22	MODE1	I	CPUモード(プルダウン)。
23	CLKIN	O	8 MHz システムクロック。
24	CLKOUT	I	8 MHz システムクロック。
25	VSS	—	GND。
26	ALE	O	アドレスラッチストローブ。
27	RD	O	データリードストローブ。
28	WR	O	データライトストローブ。
29	CLK	O	クロック出力。
30	READY	I	ビデオCDデコーダレディ。
31	OSDCS	O	OSDCイネーブル。
32	OSDCLK	O	OSDCデータクロック。
33	OSDSIN	O	OSDCデータ。
34〜41	A8〜A15	O	アドレスバス8〜15。
42〜49	AD0〜AD7	I/O	アドレスバス0〜7。
50	VSS	—	GND。
51	VCD/CDG	O	ビデオCD／CDGスイッチ。
52	HCLK	I	ホストCPUコントロールクロック。
53	ST	O	ホストCPU送信データ。
54	RT	I	ホストCPU受信データ。
55	TRACK	I	トラバースカウンタ。

端子番号	端子名称	I/O	機　能　説　明
56	ENCRST	O	ビデオエンコーダリセット。
57	DVCC	—	DVCC。
58	PAL/PAL60	O	PAL／PAL60スイッチ。
59	XNTSC	O	PAL／NTSCスイッチ。
60	SQCK	O	サブコードQリードクロック。
61	SQSO	I	サブコードQシリアルデータ。
62	BUSY	I/O	ホストCPUインターフェースビジー信号。
63	FOK	I	フォーカスサーボOK検出。
64	GFS	I	フレームシンク検出

NOTE:

- マイコンのアナログ入力(TVMSW:6ピン)を下記の通り7分割しコントロールします。
- 出力は、PAL／PAL60(58ピン)、XNTSC(59ピン)の2つのポートとIC301(CL484)に対してのコマンド設定(Set Video Format)です。

TVMSW(6ピン)		DISCのエンコード方式	TV出力モード	PAL/PAL60 (58ピン)	XNTSC (59ピン)	Set Video Format
電圧(V)	モード					
5.00						
	OFF	—	未使用(NTSC出力モード)			
4.58						
	NTSC	—	NTSC	H	L	NTSC
3.75						
	PAL	—	PAL	H	H	PAL
2.92						
	PAL60	—	PAL60	L	H	NTSC
2.08						
	PAL AUTO	NTSC	PAL60	L	H	NTSC
		PAL	PAL	H	H	PAL
1.25						
	AUTO	NTSC	NTSC	H	L	NTSC
		PAL	PAL	H	H	PAL
0.42						
	TEST	—	サーボ回路調整用(NTSC出力モード)			
0.00						

＊1　DISCのエンコード方式の判別は、MPEGデータのV_SIZE(1A1h／Word)から判断する。

＊2　サーボ回路調整用とは、調整時(可変抵抗を操作中)にサーボが外れすぎるとエマージェンシー処理に入ってしまうので、その処理に入らないようにしている。

＊3　上記の他、ENCRST(56ピン)は、TV Encoderに対するリセット信号でIC401(BU1417AK)のCDGSW、NTB、CVSY、HSY、PIXCLK、GCLK、PAL60B、VCLKの各入力ポートが変化したときにアクティブ"L"のパルスを出力する。

① CD部の基板に電源が入ったとき
② TOCを読み始めるとき
③ 上記のようなモード変化時

- TVMSW切り替え
- Video CD Discの取り替えによるエンコード方式の切り替え
- Video CD DiscとCD-DAまたはCD-Gとの取り替え

IC, BU1417AK

端子番号	端子名称	I/O	機　能　説　明
1	BOSD	I	OSDブルーデータ入力。
2	GD0	I	グリーンデータビット0 (LSB)。
3～8	GD1～GD6	I	グリーンデータビット1～6。
9	GND	—	ディジタルGND。
10	GD7	I	グリーンデータビット7 (MSB)。
11	BD0	I	ブルーデータビット0 (LSB)。
12～14	BD1～BD3	I	ブルーデータビット1～3。
15	OSDSW	I	OSD入力イネーブル。
16	CDGSWB	I	Video-C／CD-G選択。
17～19	BD4～BD6	I	ブルーデータビット4～6。
20	BD7	I	ブルーデータビット7 (MSB)。
21	GND	—	ディジタルGND。
22	NTB	I	Video-NTSC／PAL選択。
23、24	IM0、IM1	I	入力モードセットビット0、1。
25、26	TEST1、TEST2	I	通常GNDへプルダウン。
27	CVSY	I	C-SYNC又はV-SYNC入力。
28	HSY	I	H-SYNC入力。
29	PIXCLK	O	内部クロックの1／2周波数。
30	BLKB	I	データブランキング入力イネーブル。
31	VDD	—	ディジタルVDD。
32	INT	I	インターレース／ノンインターレース。
33	SLABEB	I	マスター／スレーブモードセット。
34	ADDH	I	ノンインターレース時1ライン追加。
35	VREF	I	基準電圧 (1.29 V)。
36	CGND	—	クロマ出力GND。
37	COUT	O	クロマ出力。
38	VGND	—	コンポジット出力GND。
39	VOUT	O	コンポジット出力。
40	AVSS	—	アナログ (DAC、VREF) GND。
41	NC	—	未使用。
42	IR	I	基準抵抗 (1.2 K)。
43	AVDD	—	アナログ (DAC、VREF) VDD。
44	YGND	—	ルミナンス出力GND。
45	YOUT	O	ルミナンス出力。
46	G4FSC	I	GNDへプルダウン。
47	GCLK	I	CD-Gへのビデオクロック入力。
48	YCOFF	I	DAC (YOUT、COUT) OFF。
49	YFILON	I	GNDへプルダウン。
50	PAL60B	I	NTB = HIGH時PAL60 ON.
51	VCLK	I	VCDへのビデオクロック入力。
52	RSTB	I	ロジック部イニシアルリセット。

端子番号	端子名称	I/O	機　能　説　明
53	CLKSW	I	入力クロックイネーブル分割。
54	RD0	I	レッドデータビット0 (LSB)。
55、56	RD1、RD2	I	レッドデータビット1、2。
57	ROSD	I	OSDレッドデータ入力。
58～60	RD3～RD5	I	レッドデータビット3～5。
61	VDD	—	ディジタルGND。
62	RD6、RD7	I	レッドデータビット6。
63	GOSD	I	レッドデータビット7。

IC, CL484

端子番号	端子名称	I/O	機　能　説　明
1	HSEL2	I	ホスト・アドレス・バス。
2	-DS	I	データ・ストローブ。
3	R/-W	I	リード/ライト。
4	CFLEVEL	O	符合化データFIFOレベルステータス。オープンドレイン。
5	-DACK	O	ホスト・データ・アクノリッジ。オープンドレイン。
6	HD0	I/O	ホスト・データ・バス。
7	VDD3	—	電源。3.3Vで使用。
8、9	HD1、HD2	I/O	ホスト・データ・バス。
10	VSS	—	グランド。
11～15	HD3～HD7	I/O	ホスト・データ・バス。。
16	VSS	—	グランド。
17	-TEST	I	テスト端子。通常はHighに固定。
18	VSS	—	グランド。
19	XTL IN	I	グローバルロック　40.5MHz。
20	XTL OUT	O	グローバルロック　40.5MHz。
21、22	VDD3	—	電源。3.3Vで使用。
23～28	MD0～MD5	I/O	メモリ・データ・バス。
29	VDD3	—	電源。3.3Vで使用。
30、31	MD6、MD7	I/O	メモリ・データ・バス。
32、33	-MCE0、-MCE1	O	チップ・イネーブル。
34～37	MD8～MD11	I/O	メモリ・データ・バス。
38	VSS	—	グランド。
39～42	MD12～MD15	I/O	メモリ・データ・バス。
43	VDDMAX	—	電源。5.0Vで使用。
44	-LCAS	O	下位カラム・アドレス・ストローブ。
45	-LCASIN	I	下位データ・ラッチ・イネーブル。
46	VSS	—	グランド。
47	-MWE	O	ライト・イネーブル。
48	-UCAS	O	上位カラム・アドレス・ストローブ。
49	VDD3	—	電源。3.3Vで使用。
50	-UCASIN	I	上位データ・ラッチ・イネーブル。
51、52	RAS0、RAS1	O	ロー・アドレス・ストローブ。
53～57	MA9～MA5	O	メモリ・アドレス・バス。
58	VSS	—	グランド。
59～63	MA4～MA0	O	メモリ・アドレス・バス。
64	RESERVED	—	リザーブ。
65	VDD3	—	電源。3.3Vで使用。
66～72	VD0～VD6	O	ピクセル・データ・バス。RGBまたは、YCbCrフォーマット。
73	VSS	—	グランド。
74～76	VD7～VD9	O	ピクセル・データ・バス。RGBまたは、YCbCrフォーマット。
77	VDD3	—	電源。3.3Vで使用。

端子番号	端子名称	I/O	機 能 説 明
78～80	VD10～VD12	O	ピクセル・データ・バス。RGBまたは、YCbCrフォーマット。
81	VDD3		電源。3.3Vで使用。
82～84	VD13～VD15	O	ピクセル・データ・バス。RGBまたは、YCbCrフォーマット。
85	VSS	—	グランド。
86～89	VD16～VD19	O	ピクセル・データ・バス。RGBまたは、YCbCrフォーマット。
90	VSS	—	グランド。
91～94	VD20～VD23	O	ピクセル・データ・バス。RGBまたは、YCbCrフォーマット。
95	-VSYNC or CSY	I/O	垂直同期信号。
96	-HSYNC	I/O	水平同期信号。
97	-VOE	I	ビデオ出力イネーブル。
98	VDD3	—	電源。3.3Vで使用。
99	VCLK	I/O	ビデオクロック。
100	VSS	—	グランド。
101	-RESET	I	ハードウェアリセット。
102	VSS	—	グランド。
103	CD-C2PO	I	データエラー。CD-ROMデータ入力時に使用。
104	CD-LRCK	I	LRクロック。
105	CD-DATA	I	CD-DSPからのシリアル・データ入力。
106	CD-BCK	I	CDデコーダのビット・クロック。
107	DA-LRCK	O	LRクロック。
108	DA-DATA	O	ビット・シリアル・オーディオサンプル信号。
109	DA-BCK	O	オーディオ・ビット・クロック。
110	VDD3	—	電源。3.3Vで使用。
111	DA-XCLK	I	外部オーディオ周波数クロック。
112	VDD3	—	電源。3.3Vで使用。
113	-INT	O	割り込み要求。
114	CDG-S0S1	I	ブロック・スタートSYNC。
115	HOST_ENA	I	ホスト・イネーブル。
116	RAM_ENA	I	ブートROMイネーブル。
117	CDG-VFSY	I	フレーム・スタートまたは、コンポジットSYNC。
118	DAC_EMP	O	出力エンファシス・フラグ。
119	CDDA_EMP	I	入力エンファシス・フラグ。
120	CDG-SDATA	I	サブコード・データ。
121	CDG-SCLK	I/O	サブコード・データ・クロック。
122	CDDA/VCD	O	入力データ判別。H: CDDA。L: ビデオCD。
123	VDDMAX	I	電源。5.0Vで使用。
124	FSC1	O	126ピン (FSC4) の入力CLKを1/4分周した出力。
125	VSS	—	グランド。
126	FSC4	I	分周器用入力。
127、128	HSEL0、HSEL1	I	ホスト・アドレス・バス。

IC, BU2173AF

端子番号	端子名称	I/O	機　能　説　明
1	VDD	—	デジタルVDD。
2	TSTO	O	ノーマルモード時はオープン。(テスト時に使用)
3	XTALI	I	基準発振入力。
4	XTALO	O	基準発振出力。
5	CTRLA	I	CD-G／VCDクロック切り替え端子。
6	CTRLB	I	ノーマルモード時はHに固定。
7	CTRLC	I	CD-G PAL／NTSCクロック切り替え端子。
8	TSTI	I	ノーマルモード時はVSSに接続。(テスト時に使用)
9	VSS	—	デジタル GND。
10	AVSS	—	アナログ GND。
11	FOUT3	O	未使用 ノーマルモード時はオープン。
12	VSSIO	—	I/O GND。
13	FOUT2	O	クロック出力。(2)
14	TEST	—	テストモード設定 ノーマルモード時はVSSに接続。
15	FOUT1	O	クロック出力。(1)
16	VDDIO	—	I/O VDD。
17	FOUT4	O	クロック出力。(4)
18	AVDD	—	アナログ VDD。

IC, CXD2500BQ

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter selection output.
3	MON	O	Spindle motor ON-OFF control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	Spindle motor servo control.
6	LOCK	O	H output when GFS is sampled at 460 Hz and GFS is H. L output when L is continuously 8 times.
7	NC	—	Not used.
8	VCOO	O	Oscillator circuit output for analog EFM PLL.
9	VCOI	I	Oscillator circuit input for analog EFM PLL. fLOCK = 8.6436 MHz.
10	TEST	I	TEST terminal. Normally GND.
11	PDO	O	Charge pump output for analog EFM PLL.
12	VSS	—	GND.
13	NC	—	Not used.
14	NC	—	Not used.
15	NC	—	Not used.
16	VPCO	O	Charge pump output for vari-pitch PLL.
17	VCKI	I	Clock input from external VCO for vari-pitch. fc center = 16.9344 MHz.
18	FILO	O	Filter output for master PLL (slave = digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for
21	AVSS	—	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	—	Analog power supply. (+3.5 V)
24	RF	I	EFM signal input.
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry comparate voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD.)
28	ASYE	I	L: asymmetry circuit OFF, H: asymmetry circuit ON.
29	NC	—	Not used.
30	PSSL	I	Audio data output mode selection input. Serial output at L, parallel output at H.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.
33	VDD		Power supply. (+3.5 V)
34	S DATA	O	DA16 (MSB) output when PSSL = H. 48-bit slot serial data when PSSL = L. (2's COMP, MSB first).
35	BCLK	O	DA15 output when PSSL = H. 48-bit slot bit clock when PSSL = L.
36	NC	O	DA14 output when PSSL = H. 64-bit slot serial data when PSSL = L. (2's COMP, MSB first).
37	NC	O	DA13 output when PSSL = H. 64-bit slot bit clock when PSSL = L.
38	NC	O	DA12 output when PSSL = H. 64-bit slot LR clock when PSSL = L.

Pin No.	Pin Name	I/O	Description
39	GTOP	O	DA11 output when PSSL = H. GTOP output when PSSL = L.
40	XUGF	O	DA10 output when PSSL = H. XUGF output when PSSL = L.
41	XPLCK	O	DA09 output when PSSL = H. XPLCK output when PSSL = L.
42	GFS	O	DA08 output when PSSL = H. GFS output when PSSL = L.
43	RFCK	O	DA07 output when PSSL = H. RFCK output when PSSL = L.
44	C2PO	O	DA06 output when PSSL = H. C2P0 output when PSSL = L.
45	XRAOF	O	DA05 output when PSSL = H. XRAOFoutput when PSSL = L.
46	MNT3	O	DA04 output when PSSL = H. MNT3 output when PSSL = L.
47	MNT2	O	DA03 output when PSSL = H. MNT2 output when PSSL = L.
48	MNT1	O	DA02 output when PSSL = H. MNT1 output when PSSL = L.
49	MNT0	O	DA01 output when PSSL = H. MNT0 output when PSSL = L.
50	APTR	O	Aperture correction control output. H when R channel.
51	APTL	O	Aperture correction control output. H when L channel.
52	VSS	—	GND.
53	XTAI	I	Input to 16.9344 MHz X'tal oscillator circuit. or 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal oscillator output.
55	XTSL	I	X'tal selection input. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 divider output of the pins 53 and 54. Does not change with vari-pitch.
57	C4M	O	4.2336 MHz output. When vari-pitch is performed, it changes too.
58	C16M	O	16.2336 MHz output. When vari-pitch is performed, it changes too.
59	MD2	I	Digital-out ON/OFF control. ON at H, OFF at L.
60	DOUT	O	Digital-out terminal.
61	EMPH	O	H output when the playback disc has emphasis. L output without emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	H output when S0 or S1 of the subcode sync is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	SubQ 8-bit and PCM peak level data. 16-bit output.
67	SQCK	I	Clock input for SQSO readout.
68	MUTE	I	Mute at H. Release at L.
69	SENS	O	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at fall-down edge.
73	VDD	—	Power supply (+3.5 V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Sensor input from SSP.
76	CNIN	I	Track jump number counted signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches at fall-down edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of 128 track or more at auto sequencer.

IC, SM5877AM

Pin No.	Pin Name	I/O	Description
1	MUTE	I	MODE = H: Soft mute ON/OFF terminal. (Mute at H). MODE = L: Attenuator level DOWN/UP terminal. (DOWN at H).
2	DEEM	I	De-emphasis ON/OFF terminal. (De-emphasis ON at H).
3	CKO	O	Oscillator clock output. (16.9344 MHz).
4	DVSS	—	Digital VSS terminal.
5	BCKI	I	Bit clock input terminal.
6	DI	I	Serial data input terminal.
7	DVDD	—	Digital VDD terminal.
8	LRCI	I	Sample rate clock (fs) input terminal. (H = L ch/L = R ch).
9	TSTN	I	LSI test input.
10	TO1	O	Test output 1. (Normally low level output).
11	AVDDL	—	Analog VDD terminal. (For L ch).
12	LO	O	Left channel analog output terminal.
13	AVSS	—	Analog VSS terminal.
14	RO	O	Right channel analog output terminal.
15	AVDDR	—	Analog VDD terminal. (For R ch).
16	MUTEO	O	Infinity zero detection output.
17	XVDD	—	X'tal system VDD terminal.
18	XTI	I	X'tal oscillator terminal. (Or external clock input terminal of 16.9344 MHz).
19	XTO	O	X'tal oscillator terminal.
20	XVSS	—	X'tal system VSS terminal.
21	DS	I	Double-speed/normal playback selection. (Double-speed at H).
22	RSTN	I	Reset terminal. (Reset at L).
23	MODE	I	Soft mute/Attenuator mode selection. (Soft mute at H).
24	ATCK	I	Attenuator level setup clock (Ignored when MODE = H).

IC, MB89627

Pin No.	Pin Name	I/O	Description
1	CCLK	O	SSP, DSP Control Clock.
2	DATA	O	SSP, DSP Control Data.
3	SENS	I	SSP, DSP Status.
4	XLAT	O	SSP, DSP Command Latch.
5	XRST	O	SSP, DSP Reset.
6	TVMSW	O	OFF/NTSC/PAL/PAL60/PAL AUTO/AUTO/TEST. *NOTE
7	DMUTE	O	Digital Mute.
8	AMUTE	O	Analog Mute.
9	LDON	O	Servo PCB Power on.
10	VCDRST	O	Video CD Reset.
11	OPTON	O	Optical Digital Output ON.
12	VCC	—	A/D Converter VCC.
13	VCC	—	A/D Converter VREF.
14	VSS	—	A/D Converter VSS.
15	HOSTIRQ	I	Host CPU Interrupt Request.
16	SCOR	I	Subcode Sync 0. (Subcode IRQ)
17	ILSW	I	Inter Limit Switch.
18	VCDIRQ	I	Video CD Decoder Interrupt Request.
19	N. C.	I	Not used.
20	RST	I	CPU Reset.
21	MODE0	I	CPU MODE. (Pull-down)
22	MODE1	I	CPU MODE. (Pull-down)
23	CLKIN	O	8MHz System Clock.
24	CLKOUT	I	8MHz System Clock.
25	VSS	—	GND.
26	ALE	O	Address Latch Strobe.
27	RD	O	Data Read Strobe.
28	WR	O	Data Write Strobe.
29	CLK	O	Clock out.
30	READY	I	Video CD Decoder Ready.
31	OSDCS	O	OSDC Enable.
32	OSDCLK	O	OSDC Data Clock.
33	OSDSIN	O	OSDC Data.
34-41	A8-A15	O	Address Bus 8-15.
42-49	AD0-AD7	I/O	Address/Data Bus 0-7.
50	VSS	—	GND.
51	VCD/CDG	O	Video CD/CDG Switch.
52	HCLK	I	Host CPU Control Clock.
53	ST	O	Host CPU Control Send Data.
54	RT	I	Host CPU Control Receive Data.
55	TRACK	I	Travase Counter.

Pin No.	Pin Name	I/O	Description
56	ENCRST	O	Video Encoder Reset.
57	DVCC	—	DVCC.
58	PAL/PAL60	O	PAL/PAL60 Switch.
59	XNTSC	O	PAL/NTSC Switch.
60	SQCK	O	Subcode Q Read Clock.
61	SQSO	I	Subcode Q Serial Data.
62	BUSY	I/O	Host CPU I/F Busy Signal.
63	FOK	I	Focus Servo OK Detect.
64	GFS	I	Frame Sync Detect.

Note

- Analog input (TVMSW: 6 pin) of the microprocessor is divided into 7, then controlled.
- The output are the command setting (Set Video Format) to the two ports of PAL/PAL60 (58 pin), XNTSC (59 pin) and IC301 (CL484).

TVMSW (6 pins)		DISC encoding system	TV output mode	PAL/PAL60 (58 pins)	XNTSC (59 pins)	Set Video Format
Volt (V)	Mode					
5.00	OFF	—	Not used (NTSC output mode).			
4.58	NTSC	—	NTSC	H	L	NTSC
3.75	PAL	—	PAL	H	H	PAL
2.92	PAL60	—	PAL60	L	H	NTSC
2.08	PAL AUTO	NTSC	PAL60	L	H	NTSC
		PAL	PAL	H	H	PAL
1.25	AUTO	NTSC	NTSC	H	L	NTSC
		PAL	PAL	H	H	PAL
0.42	TEST	—	For servo circuit adjustment (NTSC output mode).			
0.00						

*1 As to identification of the disc encoding system, it is identified from the V_SIZE (1A1h/word) of the MPEG data.

*2 "For servo circuit adjustment" is the process during adjustment (when variable resistor is operated by service engineer) that the microprocessor enters the emergency process routine if the servo system goes extremely out of the servo range.

*3 In addition to the above, ENCRST (56 pin) is the reset signal for TV encoder, issues the active "L" pulse when each of the input port of CDGSW, NTB, CVSY, HSY, PIXCLK, GCLK, PAL60B and VCLK of IC401 (BU1417AK) has changed as follows:

① When the power is supplied to the circuit boards of the CD block,

② When starting to reach TOC.

③ The modes have changed as follows:

- TVMSW is switched.
- Switching of encoding system owing to exchange of video CD disc
- Exchange of video CD disc with the CD-DA or CD-G.

IC, BU1417AK

Pin No.	Pin Name	I/O	Description
1	BOSD	I	OSD Blue Data input.
2	GD0	I	Green Data Bit 0. (LSB)
3-8	GD1-GD6	I	Green Data Bit 1-6.
9	GND	—	Digital ground.
10	GD7	I	Green Data Bit 7. (MSB)
11	BD0	I	Blue Data Bit 0. (LSB)
12-14	BD1-BD3	I	Blue Data Bit 1-3.
15	OSDSW	I	OSD input enable.
16	CDGSWB	I	Select Video-CD/CD-G.
17-19	BD4-BD6	I	Blue Data Bit 4-6.
20	BD7	I	Blue Data Bit 7. (MSB)
21	GND	—	Digital ground.
22	NTB	I	Select NTSC/PAL mode.
23, 24	IM0, IM1	I	Input mode set Bit 0, 1.
25, 26	TEST1, TEST2	I	Normally pulldown to GND.
27	CVSY	I	C-SYNC or V-SYNC input.
28	HSY	I	H-SYNC input.
29	PIXCLK	O	1/2 Freq. of internal CL.
30	BLKB	I	Data blanking ENABLE.
31	VDD	—	Digital VDD.
32	INT	I	INTERLACE/NON-INTERLACE.
33	SLABEB	I	Set mode MASTER/SLABE.
34	ADDH	I	ADD One_line at Non-inter.
35	VREF	I	Reference voltage. (1.29V)
36	CGND	—	Chroma output ground.
37	COUT	O	Chroma output.
38	VGND	—	Composite output ground.
39	VOUT	O	Composite output.
40	AVSS	—	Analog (DAC, VREF) ground.
41	NC	—	Not used.
42	IR	I	Reference resistor. (1.2K)
43	AVDD	—	Analog (DAC, REF) VDD.
44	YGND	—	Luminance output ground.
45	YOUT	O	Luminance output.
46	G4FSC	I	Pulldown to GND.
47	GCLK	I	Video clock input for CD-G.
48	YCOFF	I	DAC (YOUT, COUT) off.
49	YFILON	I	Pulldown to GND.
50	PAL60B	I	PAL60 ON at NTB=HIGH.
51	VCLK	I	Video clock input for VCD.
52	RSTB	I	Logic part initial reset.

Pin No.	Pin Name	I/O	Description
53	CLKSW	I	Divide input CLK $\overline{\text{ENABLE}}$.
54	RD0	I	Red data Bit 0. (LSB)
55, 56	RD1, RD2	I	Red data Bit 1, 2.
57	ROSD	I	OSD Red data input.
58-60	RD3-RD5	I	Red data Bit 3-5.
61	VDD	—	Digital VDD.
62	RD6, RD7	I	Red data Bit 6, 7.
63	GOSD	I	OSD green data input.

IC, CL484

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11-15	HD3-HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23-28	MD0-MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34-37	MD8-MD11	I/O	Memory data bus.
38	VSS	—	GND.
39-42	MD12-MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53-57	MA9-MA5	O	Memory address bus.
58	VSS	—	GND.
59-63	MA4-MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66-72	VD0-VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	—	GND.
74-76	VD7-VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
53	CLKSW	I	Divide input CLK $\overline{\text{ENABLE}}$.
54	RD0	I	Red data Bit 0. (LSB)
55, 56	RD1, RD2	I	Red data Bit 1, 2.
57	ROSD	I	OSD Red data input.
58-60	RD3-RD5	I	Red data Bit 3-5.
61	VDD	—	Digital VDD.
62	RD6, RD7	I	Red data Bit 6, 7.
63	GOSD	I	OSD green data input.

IC, CL484

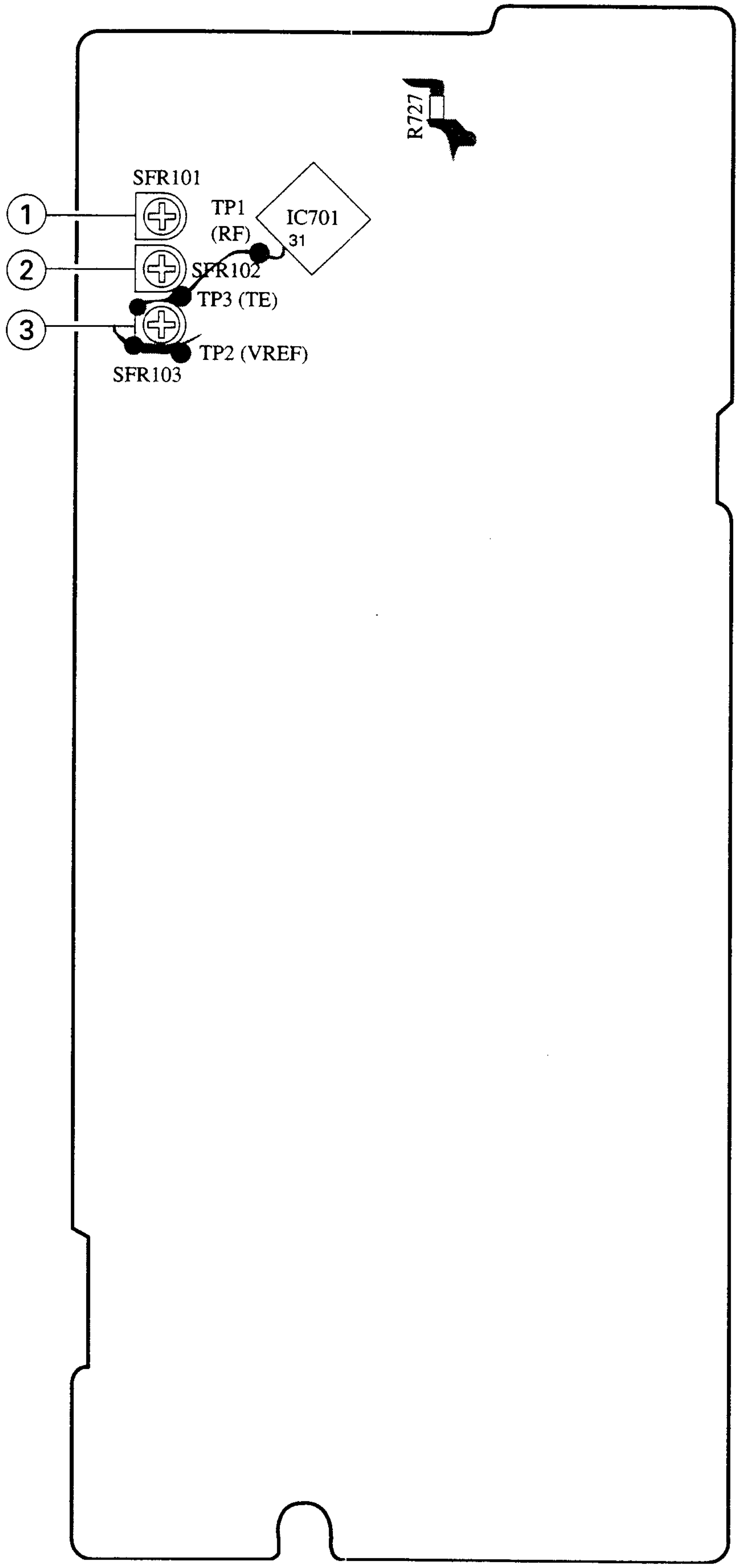
Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11-15	HD3-HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23-28	MD0-MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34-37	MD8-MD11	I/O	Memory data bus.
38	VSS	—	GND.
39-42	MD12-MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53-57	MA9-MA5	O	Memory address bus.
58	VSS	—	GND.
59-63	MA4-MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66-72	VD0-VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	—	GND.
74-76	VD7-VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78-80	VD10-VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3	—	Power supply pin. Used in 3.3 V.
82-84	VD13-VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86-89	VD16-VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91-94	VD20-VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	CDG-S0S1	I	Block start sync.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	CDG-VFSY	I	Frame start or composite sync.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	CDG-SDATA	I	Subcode data.
121	CDG-SCLK	I/O	Subcode data clock.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	FSC1	O	Output generated by dividing-by-4 the pin-126 input CLK.
125	VSS	—	GND.
126	FSC4	I	Frequency divider input.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, BU2173AF

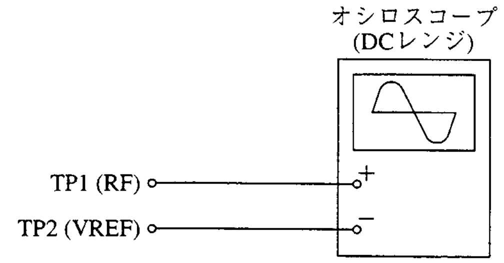
Pin No.	Pin Name	I/O	Description
1	VDD	—	Digital VDD.
2	TSTO	O	Open during normal mode. (Used in test mode.)
3	XTALI	I	Reference oscillator input.
4	XTALO	O	Reference oscillator output.
5	CTRLA	I	CD-G/VCD clock selector terminal.
6	CTRLB	I	Fixed to "H" during normal mode.
7	CTRLC	I	CD-G PAL/NTSC clock selector terminal.
8	TSTI	I	Connected to Vss during normal mode. (Used in test mode.)
9	VSS	—	Digital GND.
10	AVSS	—	Analog GND.
11	FOUT3	O	Not used. Open during normal mode.
12	VSSIO	—	I/O GND.
13	FOUT2	O	Clock output (2).
14	TEST	—	Test mode setting. Connected to Vss during normal mode.
15	FOUT1	O	Clock output (1).
16	VDDIO	—	I/O VDD.
17	FOUT4	O	Clock output (4).
18	AVDD	—	Analog VDD.

VCD MAIN C.B (PATTERN SIDE)

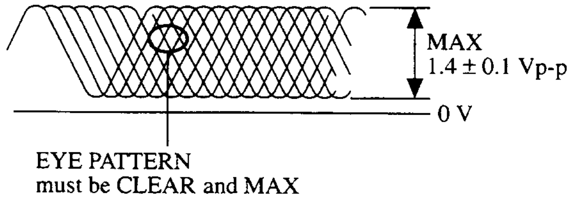

R727
SFR101
①
②
③
TP1
(RF)
IC701
31
SFR102
TP3 (TE)
TP2 (VREF)
SFR103

注意: ・ (10: 1) のプローブを接続して、調整して下さい。
・ 各調整には、オシロスコープの⊖側をTP2 (VREF) に接続して下さい。

1. フォーカスバイアス調整
この調整は、光学系ブロックを交換修理した場合に調整すること。

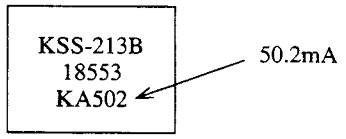

オシロスコープ
(DCレンジ)
TP1 (RF)
TP2 (VREF)
+
−

1) テストポイントTP1 (RF)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が最大となり、かつ中央のひし形が、鮮明になるようにSFR11を調整する。


MAX
1.4 ± 0.1 Vp-p
0 V
EYE PATTERN
must be CLEAR and MAX

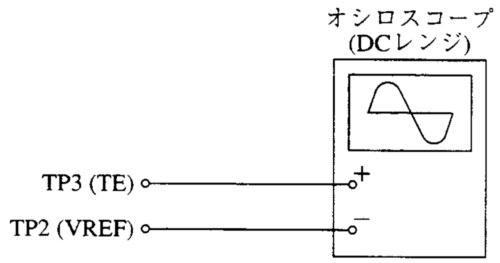
VOLT/DIV: 50mV
TIME/DIV: 0.5 μS

注意: レーザー電流の確認はR727 (10Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

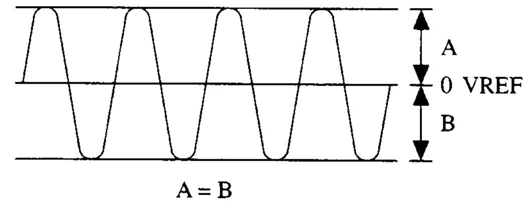

KSS-213B
18553
KA502
50.2mA

$$\text{レーザー電流Iop} = \frac{\text{R727の両端電圧}}{10\Omega}$$

2. トラッキング・バランス調整


オシロスコープ
(DCレンジ)
TP3 (TE)
TP2 (VREF)
+
−

1) テストポイントTP3 (TE)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて、▶PLAY状態にする。
4) SFR13を回しトラッキングゲインを絞る。
5) オシロスコープのトラバース波形が、下図のように上下対称になるようにSFR12を調整する。
6) 調整後、各端子のアースリード線をはずす。



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. トラッキングゲイン調整
この調整を正確に行うためには、サーボアナライザーが必要です。しかし、このゲインはマージンを持っているため、通常では少し位ずれていてもほとんど問題はありません。したがってこの調整は行わないで下さい。フォーカス/トラッキングゲインは2軸デバイス動作時の機械的雑音と機械的ショックに対するピックアップの追従性を決めています。しかし、これは互いに相反するため、両方を満足する点に調整してあります。

- ● ゲインを上げると2軸デバイス動作時の雑音が増加する。
- ● ゲインを下げると機械的ショックに弱くなり音飛びを起こしやすくなる。

そしてゲインの調整がずれていると次頁の様な症状が出ます。

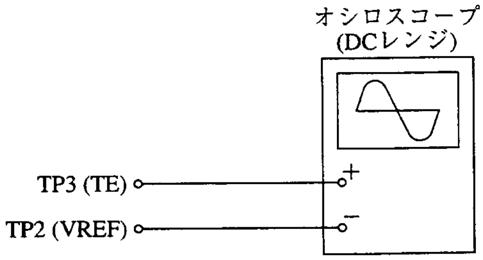
ゲイン 症状	(フォーカス)	トラッキング
● STOP→▶PLAY 時，又は自動選曲時 (⏮,⏭ボタンを押したとき) に演奏が始まるまでの時間が長くなる。(通常は2秒位です。)	低い	低い 又は 高い
● STOP→▶PLAY 時，又は自動選曲時 (⏮,⏭ボタンを押したとき) に演奏が始まらないでディスクが回転を続ける。	——	低い
● STOP→▶PLAY 時，しばらくすると回転が止まる。	低い又は高い	——
● 演奏中に音がとぎれる。又，タイムカウンターの表示が進まなくなる。	——	低い
● 2軸ディバイス動作時のノイズが多くなる。	高い	高い

なお、簡易調整として下記の方法があります。

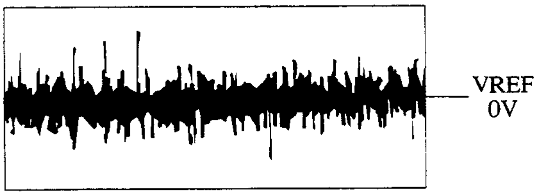
—— 簡易調整 ——

注意: 正確には調整できないため、調整を行う前にボリュームの位置を憶えておいて、簡易調整を行った後のボリュームの位置と比較して、そのずれが少ないときは元のボリュームの位置に戻しておいて下さい。

調整方法:



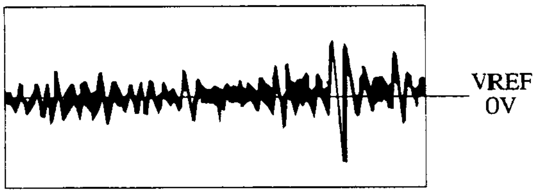
1. セットを水平に置く。
   (セットを水平に置かないと2軸デバイスが重力の影響を受け、調整出来ません。)
2. テストディスクTCD-782 (YEDS-18)を入れて2曲目を再生する。
3. オシロスコープをTP3 (TE)、TP2 (VREF) に接続する。
4. オシロスコープの波形が下図の波形になるようにSFR13を調整する。(トラッキングゲイン調整)



VOLT/DIV: 50mV
TIME/DIV: 1mS

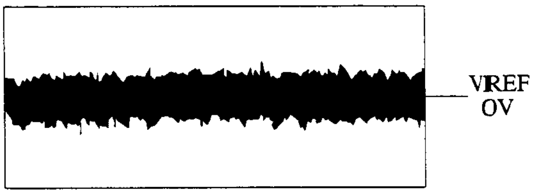
● 悪い例

トラッキングゲインが低い時
(調整されている波形と比べて基本波が表れるようになる。)



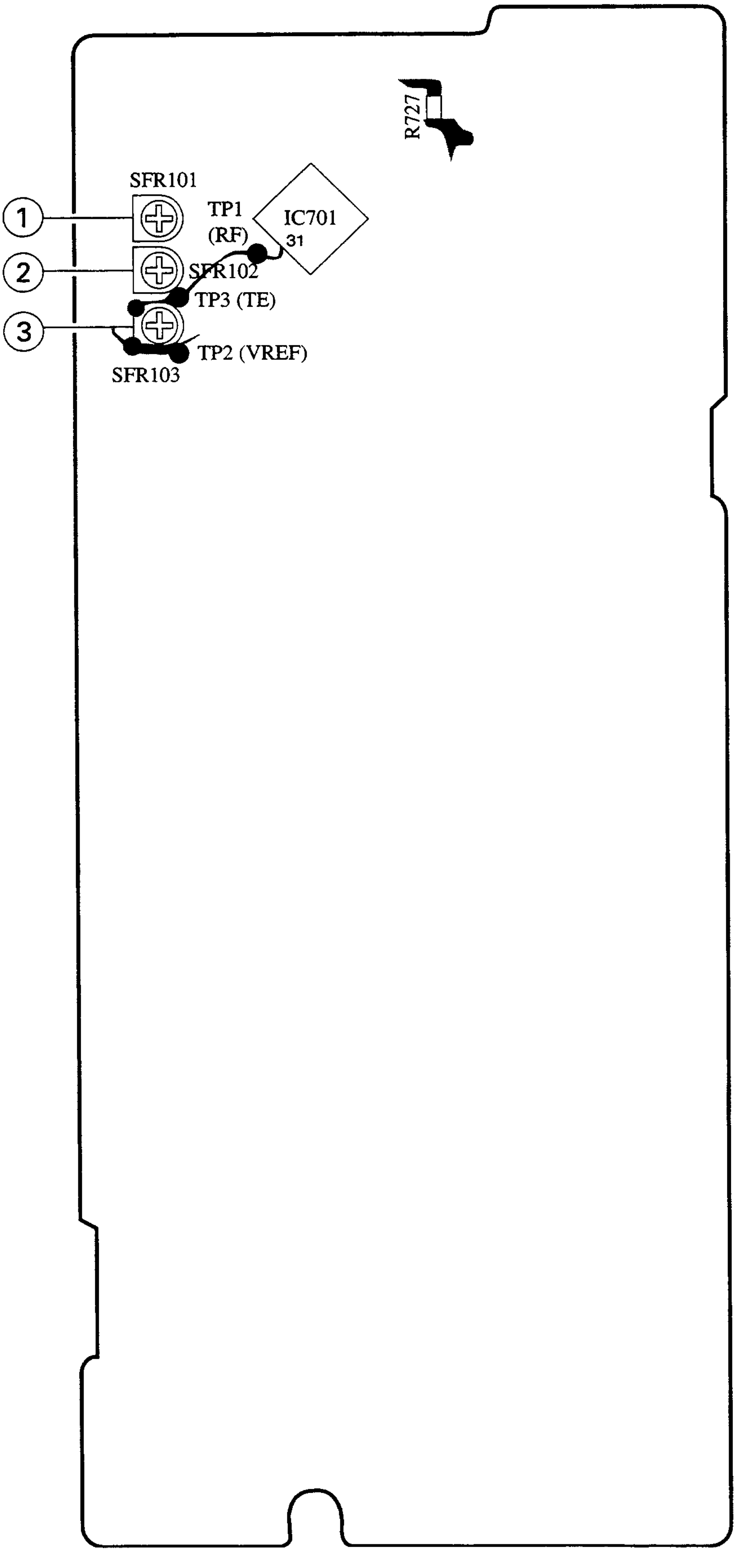
VOLT/DIV: 50mV
TIME/DIV: 1mS

トラッキングゲインが高い時
(ゲインが低い時と比べて基本波が高い)



VOLT/DIV: 50mV
TIME/DIV: 1mS

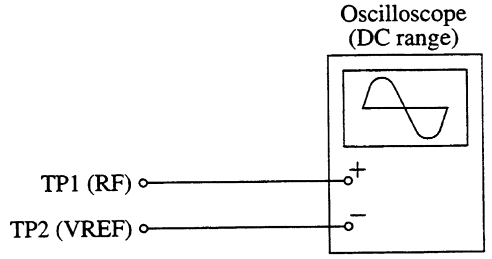
VCD MAIN C.B (PATTERN SIDE)


R727
SFR101
①
TP1
(RF)
IC701
31
②
SFR102
TP3 (TE)
③
TP2 (VREF)
SFR103

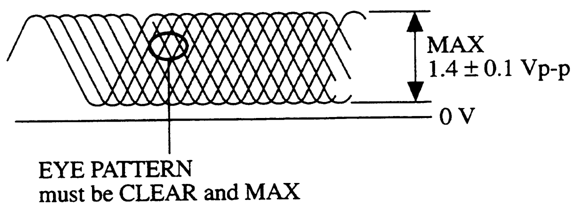
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

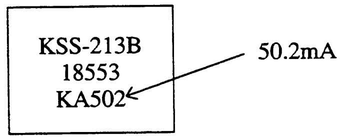


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR11 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



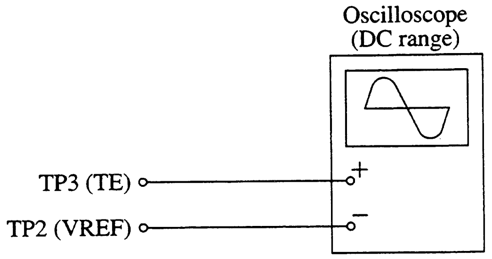
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R727 (10Ω). The difference for the specified value shown on the level must be within±6.0mA.

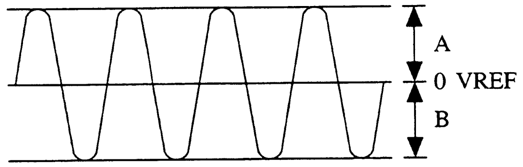


$$\text{Laser current Iop} = \frac{\text{Voltage across R727}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR13 to decrease the tracking gain..
5) Adjust SFR12 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

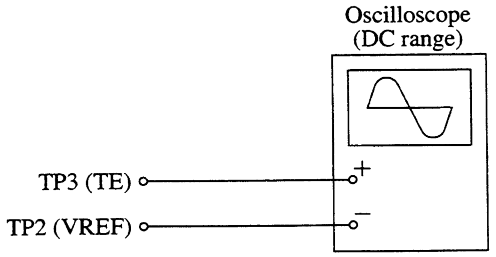
Symptoms \ Gain	(Focus)	Tracking
● The time until music starts becomes longer for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP →▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

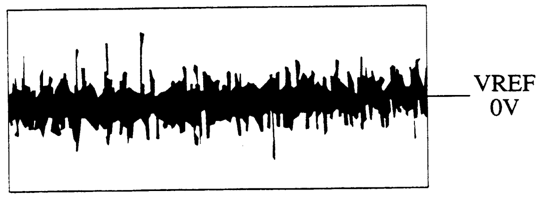
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



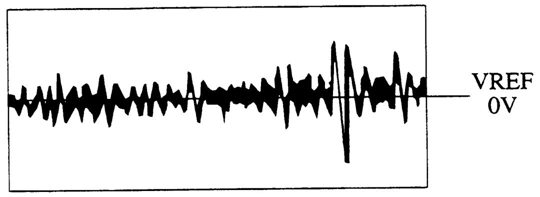
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF).
4) Adjust SFR13 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

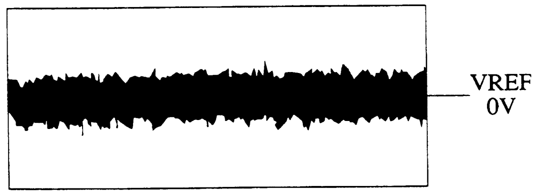
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



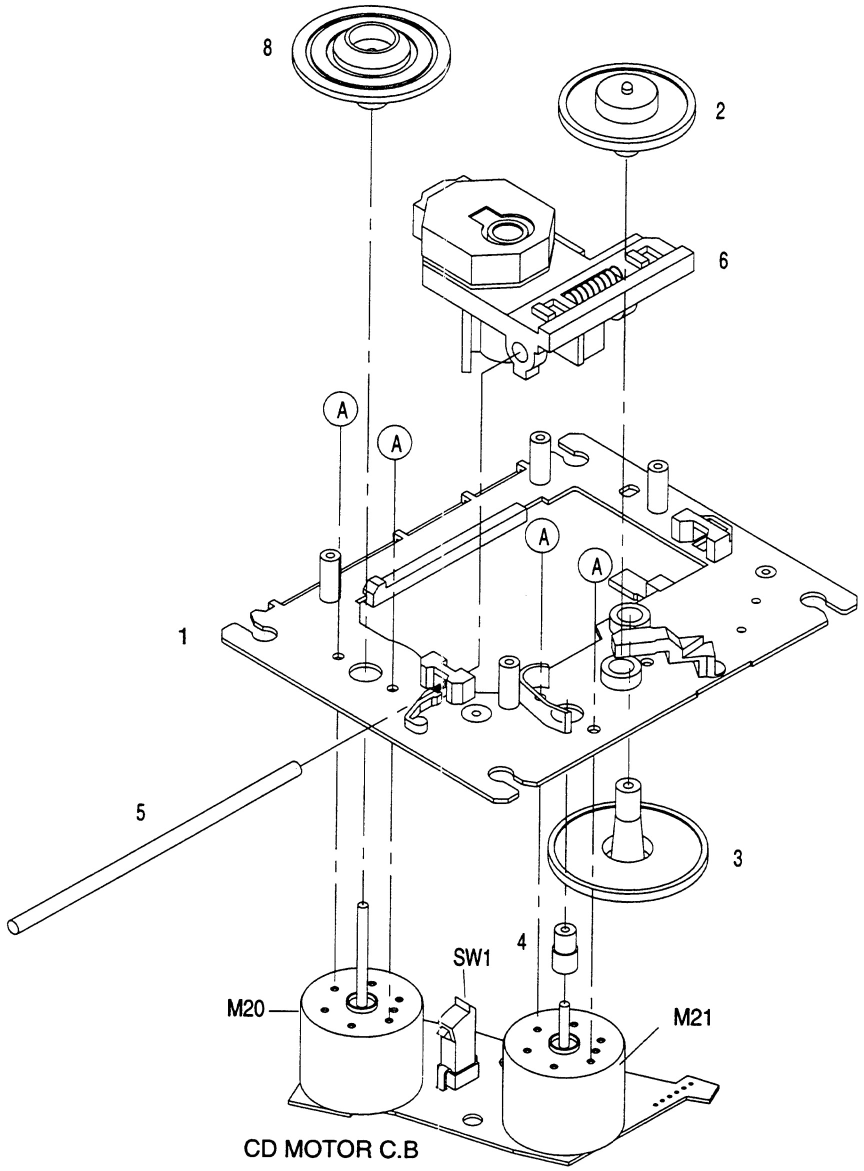
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 C6N)



CD MECHANISM PARTS LIST 1/1 (3ZG-2 C6N)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-232-11K	--	O-SERT S ASSY,S5
2	83-ZG2-237-11K	--	GEAR,A5
3	83-ZG2-205-219	0E	GEAR,B
4	83-ZG2-238-01K	--	GEAR,MOTOR 5
5	83-ZG2-207-119	1A	SHAFT,SLIDE
6	87-070-445-010	2C	PICK-UP,KSS-213B
8	83-ZG2-227-01K	--	TURN TABLE,C1
A	87-261-032-219	0E	SCREW V+2-3

MODEL NO. 6ZG-1 (D, F, P, V1)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

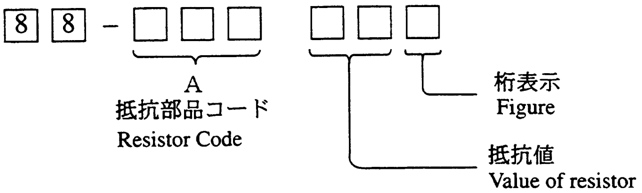
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-002-783-110	2Y	IC,CXD2500BQ
	87-A20-606-010	1C	IC,PQ05RD11
	87-017-825-010	1E	IC,GP1F32T<D>
	84-ZG1-669-010	2M	C-IC,MB89627R-361
	87-A20-255-040	1B	C-IC,SN74LV373NS
	87-A20-464-040	1F	C-IC,LH5164AN-10L
	87-A20-252-040	0E	C-IC,SN74LV00NS
	87-A20-253-040	0E	C-IC,SN74LV04NS
	87-A20-254-040	0E	C-IC,SN74LV32NS
	87-A20-576-040	1A	C-IC,M51945A
	87-A20-244-010	3M	C-IC,CL484
	87-A20-200-040	2E	C-IC,HM514260CJ7/CLJ7
	86-NM1-621-040	1H	C-IC,LH5317W1
	87-A20-256-040	1C	C-IC,PQ20VZ5U
	87-A20-372-010	2P	C-IC,TC9409BF
	87-017-888-080	1A	C-IC,NJM4558MD
	87-001-982-010	1C	IC,TA7291S
	87-017-745-010	2A	C-IC,CXA1782BQ
	87-A20-257-040	1H	C-IC,BA6791FP
	87-A20-247-010	2P	C-IC,BU1417AK
TRANSISTOR			
	87-026-608-080	0E	C-TR,DTC123JK<F>
	89-421-722-380	0E	TR,2SD2172V/W
	89-320-011-080	0E	TR,2SC2001K
	87-026-239-080	0E	C-TR,DTC114TK
	87-026-470-080	1A	C-TR,HN1C03FB
	89-111-625-080	0E	C-TR,2SA1162GR
	87-026-235-080	0E	C-TR,DTC114EK
DIODE			
	87-020-027-080	0E	C-DIODE,1SS184
	87-A40-196-080	0E	C-ZENER,UDZ6.2B
MAIN VCD C.B			
C101	87-010-197-080	0E	C-CAP,S 0.01-25 K B<D>
C102	87-010-550-040	0E	CAP,E 100-6.3 5L SRE<D>
C103	87-010-318-080	0E	C-CAP,S 47P-50 J CH<D>
C104	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C105	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C106	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C107	87-012-156-080	0E	C-CAP,S 220P-50 J CH GRM
C108	87-010-184-080	0E	C-CAP,S 3300P-50 K B
C109	87-010-194-080	0E	C-CAP,S 0.047-25 Z F
C111	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C112	87-012-358-080	0E	C-CAP,S 0.47-10 Z F
C113	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C114	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C115	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C116	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C117	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C118	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C130	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C201	87-010-499-040	0E	CAP,E 22-6.3 M 5L SRE
C202	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C203	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C204	87-010-316-080	0E	C-CAP,S 33P-50 J CH
C205	87-010-316-080	0E	C-CAP,S 33P-50 J CH
C206	87-010-499-040	0E	CAP,E 22-6.3 M 5L SRE
C207	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C208	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C209	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C210	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C211	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C212	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C301	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C302	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C303	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C304	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C305	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C306	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C307	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C308	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C309	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C310	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C311	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C312	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C313	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C314	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C315	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C316	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C317	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C320	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C321	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C322	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C323	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C324	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C330	87-010-152-080	0E	C-CAP,S 8P-50 D CH
C331	87-010-152-080	0E	C-CAP,S 8P-50 D CH
C401	87-010-496-040	0E	CAP,E 3.3-50 M 5L SRE
C402	87-010-496-040	0E	CAP,E 3.3-50 M 5L SRE
C501	87-010-498-040	0E	CAP,E 10-16 M 5L SRE
C503	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C504	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C505	87-010-313-080	0E	C-CAP,S 18P-50 J CH
C506	87-010-313-080	0E	C-CAP,S 18P-50 J CH
C507	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C508	87-010-498-040	0E	CAP,E 10-16 M 5L SRE
C509	87-010-498-040	0E	CAP,E 10-16 M 5L SRE
C510	87-010-498-040	0E	CAP,E 10-16 M 5L SRE
C511	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C512	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C513	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C514	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C515	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C520	87-010-186-080	0E	C-CAP,S 4700P-50 K B
C521	87-010-187-080	0E	C-CAP,S 5600P-50 K B
C523	87-010-177-080	0E	C-CAP,S 820P-50 J SL
C524	87-010-805-080	0E	C-CAP,S 1-16 Z F
C530	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C531	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C532	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C533	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C534	87-010-318-080	0E	C-CAP,S 47P-50 J CH
C535	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C536	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C537	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C538	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C540	87-010-264-040	0E	CAP,E 100-10 M 5L SRE
C541	87-010-264-040	0E	CAP,E 100-10 M 5L SRE
C601	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C602	87-010-101-080	0E	CAP,E 220-16 SME
C603	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C701	87-010-313-080	0E	C-CAP,S 18P-50 J CH
C702	87-010-193-080	0E	C-CAP,S 0.033-25 Z F C2012
C703	87-010-958-080	0E	C-CAP,S 0.01-25 J B
C704	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C705	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C707	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C708	87-010-805-080	0E	C-CAP,S 1-16 Z F
C709	87-012-155-080	0E	C-CAP,S 180P-50 J CH
C710	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C711	87-010-499-040	0E	CAP,E 22-6.3 M 5L SRE
C712	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C713	87-016-081-080	0E	C-CAP,S 0.1-16 K R

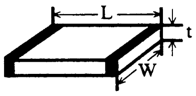
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C714	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C715	87-012-141-080	0E	C-CAP,S 0.22-16 Z F
C716	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C717	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C718	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C719	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C720	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C721	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C722	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C725	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C726	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C727	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C728	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C729	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C731	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C733	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C734	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C735	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C736	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C737	87-010-805-080	0E	C-CAP,S 1-16 Z F
C738	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C751	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C801	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C802	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C803	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C804	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C805	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C806	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C807	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C821	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C822	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C823	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C824	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C825	87-010-371-080	0E	CAP,E 470-6.3 M SME
C826	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C827	87-010-175-080	0E	C-CAP,S 560P-50 J SL
C828	87-010-317-080	0E	C-CAP,S 39P-50 J CH
C829	87-010-197-080	0E	C-CAP,S 0.01-25 K B
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
J502	87-009-393-010	1A	JACK,PIN 2P RED W/O SW
J801	87-009-502-010	1A	JACK,PIN 1P YEL W/O SW
L101	87-005-196-080	0E	COIL,10UH K EL0606KSI
L201	87-005-196-080	0E	COIL,10UH K EL0606KSI
L301	87-005-196-080	0E	COIL,10UH K EL0606KSI
L302	87-005-196-080	0E	COIL,10UH K EL0606KSI
L303	87-005-196-080	0E	COIL,10UH K EL0606KSI
L801	87-005-196-080	0E	COIL,10UH K EL0606KSI
L821	87-005-189-080	0E	COIL,2.7UH K EL0606
L822	87-005-190-080	0E	COIL,3.3UH K EL0606
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
R740	87-022-364-080	0E	C-RES,S 82K-1/10W F
R741	87-022-362-080	0E	C-RES,S 56K-1/10W F
R742	87-022-362-080	0E	C-RES,S 56K-1/10W F
R743	87-022-362-080	0E	C-RES,S 56K-1/10W F
R744	87-022-362-080	0E	C-RES,S 56K-1/10W F
R745	87-022-364-080	0E	C-RES,S 82K-1/10W F
S101	87-036-109-010	1A	SW,MICRO SPPB61
S102	87-036-109-010	1A	SW,MICRO SPPB61
S103	87-036-109-010	1A	SW,MICRO SPPB61
S201	87-A90-300-010	1B	SW,SL SSAA 1-3 B
SFR701	87-024-175-080	0E	SFR,47K H RH0638C
SFR702	87-024-176-080	0E	SFR,100K H RH0638C
SFR703	87-024-175-080	0E	SFR,47K H RH0638C
X201	84-JP7-609-080	1B	VIB,XTAL 8.00MHZ
X301	87-A70-062-080	1D	VIB,XTAL 40.5MHZ
X501	87-030-270-080	1C	VIB,XTAL 16.9344MHZ HC-49/U03
LED C.B<F>			
LED901	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>
LED902	87-017-350-080	0E	LED,SEL1550CM PGRN<F>
LED903	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>
T-T C.B			
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C714	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C715	87-012-141-080	0E	C-CAP,S 0.22-16 Z F
C716	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C717	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C718	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C719	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C720	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C721	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C722	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C725	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C726	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C727	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C728	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C729	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C731	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C733	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C734	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C735	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C736	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C737	87-010-805-080	0E	C-CAP,S 1-16 Z F
C738	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C751	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C801	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C802	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C803	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C804	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C805	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C806	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C807	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C821	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C822	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C823	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C824	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C825	87-010-371-080	0E	CAP,E 470-6.3 M SME
C826	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C827	87-010-175-080	0E	C-CAP,S 560P-50 J SL
C828	87-010-317-080	0E	C-CAP,S 39P-50 J CH
C829	87-010-197-080	0E	C-CAP,S 0.01-25 K B
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
J502	87-009-393-010	1A	JACK,PIN 2P RED W/O SW
J801	87-009-502-010	1A	JACK,PIN 1P YEL W/O SW
L101	87-005-196-080	0E	COIL,10UH K EL0606KSI
L201	87-005-196-080	0E	COIL,10UH K EL0606KSI
L301	87-005-196-080	0E	COIL,10UH K EL0606KSI

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
L302	87-005-196-080	0E	COIL,10UH K EL0606KSI
L303	87-005-196-080	0E	COIL,10UH K EL0606KSI
L801	87-005-196-080	0E	COIL,10UH K EL0606KSI
L821	87-005-189-080	0E	COIL,2.7UH K EL0606
L822	87-005-190-080	0E	COIL,3.3UH K EL0606
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
R740	87-022-364-080	0E	C-RES,S 82K-1/10W F
R741	87-022-362-080	0E	C-RES,S 56K-1/10W F
R742	87-022-362-080	0E	C-RES,S 56K-1/10W F
R743	87-022-362-080	0E	C-RES,S 56K-1/10W F
R744	87-022-362-080	0E	C-RES,S 56K-1/10W F
R745	87-022-364-080	0E	C-RES,S 82K-1/10W F
S101	87-036-109-010	1A	SW,MICRO SPPB61
S102	87-036-109-010	1A	SW,MICRO SPPB61
S103	87-036-109-010	1A	SW,MICRO SPPB61
S201	87-A90-300-010	1B	SW,SL SSAA 1-3 B
SFR701	87-024-175-080	0E	SFR,47K H RH0638C
SFR702	87-024-176-080	0E	SFR,100K H RH0638C
SFR703	87-024-175-080	0E	SFR,47K H RH0638C
X201	84-JP7-609-080	1B	VIB,XTAL 8.00MHZ
X301	87-A70-062-080	1D	VIB,XTAL 40.5MHZ
X501	87-030-270-080	1C	VIB,XTAL 16.9344MHZ HC-49/U03

LED C.B<F>

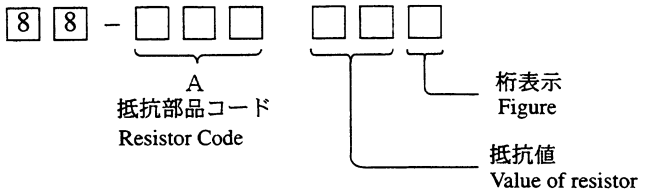
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED901	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>
LED902	87-017-350-080	0E	LED,SEL1550CM PGRN<F>
LED903	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>

T-T C.B

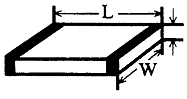
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

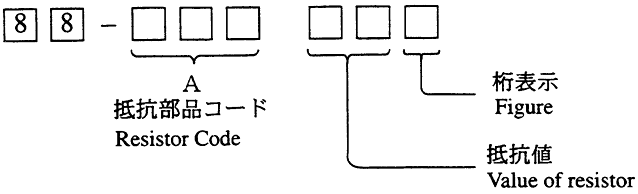
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C714	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C715	87-012-141-080	0E	C-CAP,S 0.22-16 Z F
C716	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C717	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C718	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C719	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C720	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C721	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C722	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C725	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C726	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C727	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C728	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C729	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C731	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C733	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C734	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C735	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C736	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C737	87-010-805-080	0E	C-CAP,S 1-16 Z F
C738	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C751	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C801	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C802	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C803	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C804	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C805	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C806	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C807	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C821	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C822	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C823	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C824	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C825	87-010-371-080	0E	CAP,E 470-6.3 M SME
C826	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C827	87-010-175-080	0E	C-CAP,S 560P-50 J SL
C828	87-010-317-080	0E	C-CAP,S 39P-50 J CH
C829	87-010-197-080	0E	C-CAP,S 0.01-25 K B
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
J502	87-009-393-010	1A	JACK,PIN 2P RED W/O SW
J801	87-009-502-010	1A	JACK,PIN 1P YEL W/O SW
L101	87-005-196-080	0E	COIL,10UH K EL0606KSI
L201	87-005-196-080	0E	COIL,10UH K EL0606KSI
L301	87-005-196-080	0E	COIL,10UH K EL0606KSI

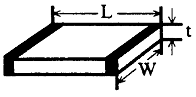
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
L302	87-005-196-080	0E	COIL,10UH K EL0606KSI
L303	87-005-196-080	0E	COIL,10UH K EL0606KSI
L801	87-005-196-080	0E	COIL,10UH K EL0606KSI
L821	87-005-189-080	0E	COIL,2.7UH K EL0606
L822	87-005-190-080	0E	COIL,3.3UH K EL0606
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
R740	87-022-364-080	0E	C-RES,S 82K-1/10W F
R741	87-022-362-080	0E	C-RES,S 56K-1/10W F
R742	87-022-362-080	0E	C-RES,S 56K-1/10W F
R743	87-022-362-080	0E	C-RES,S 56K-1/10W F
R744	87-022-362-080	0E	C-RES,S 56K-1/10W F
R745	87-022-364-080	0E	C-RES,S 82K-1/10W F
S101	87-036-109-010	1A	SW,MICRO SPPB61
S102	87-036-109-010	1A	SW,MICRO SPPB61
S103	87-036-109-010	1A	SW,MICRO SPPB61
S201	87-A90-300-010	1B	SW,SL SSAA 1-3 B
SFR701	87-024-175-080	0E	SFR,47K H RH0638C
SFR702	87-024-176-080	0E	SFR,100K H RH0638C
SFR703	87-024-175-080	0E	SFR,47K H RH0638C
X201	84-JP7-609-080	1B	VIB,XTAL 8.00MHZ
X301	87-A70-062-080	1D	VIB,XTAL 40.5MHZ
X501	87-030-270-080	1C	VIB,XTAL 16.9344MHZ HC-49/U03
LED C.B<F>			
LED901	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>
LED902	87-017-350-080	0E	LED,SEL1550CM PGRN<F>
LED903	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>
T-T C.B			
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C714	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C715	87-012-141-080	0E	C-CAP,S 0.22-16 Z F
C716	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C717	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C718	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C719	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C720	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C721	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C722	87-010-497-040	0E	CAP,E 4.7-35 5L SRE
C725	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C726	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C727	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C728	87-010-549-040	0E	CAP,E 47-6.3 M 5L SRE
C729	87-010-182-080	0E	C-CAP,S 2200P-50 K B
C731	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C733	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C734	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C735	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C736	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C737	87-010-805-080	0E	C-CAP,S 1-16 Z F
C738	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C751	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C801	87-010-550-040	0E	CAP,E 100-6.3 5L SRE
C802	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C803	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C804	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C805	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C806	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C807	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C821	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C822	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C823	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C824	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C825	87-010-371-080	0E	CAP,E 470-6.3 M SME
C826	87-012-140-080	0E	C-CAP,S 470P-50 J CH
C827	87-010-175-080	0E	C-CAP,S 560P-50 J SL
C828	87-010-317-080	0E	C-CAP,S 39P-50 J CH
C829	87-010-197-080	0E	C-CAP,S 0.01-25 K B
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
J502	87-009-393-010	1A	JACK,PIN 2P RED W/O SW
J801	87-009-502-010	1A	JACK,PIN 1P YEL W/O SW
L101	87-005-196-080	0E	COIL,10UH K EL0606KSI
L201	87-005-196-080	0E	COIL,10UH K EL0606KSI
L301	87-005-196-080	0E	COIL,10UH K EL0606KSI

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
L302	87-005-196-080	0E	COIL,10UH K EL0606KSI
L303	87-005-196-080	0E	COIL,10UH K EL0606KSI
L801	87-005-196-080	0E	COIL,10UH K EL0606KSI
L821	87-005-189-080	0E	COIL,2.7UH K EL0606
L822	87-005-190-080	0E	COIL,3.3UH K EL0606
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
R740	87-022-364-080	0E	C-RES,S 82K-1/10W F
R741	87-022-362-080	0E	C-RES,S 56K-1/10W F
R742	87-022-362-080	0E	C-RES,S 56K-1/10W F
R743	87-022-362-080	0E	C-RES,S 56K-1/10W F
R744	87-022-362-080	0E	C-RES,S 56K-1/10W F
R745	87-022-364-080	0E	C-RES,S 82K-1/10W F
S101	87-036-109-010	1A	SW,MICRO SPPB61
S102	87-036-109-010	1A	SW,MICRO SPPB61
S103	87-036-109-010	1A	SW,MICRO SPPB61
S201	87-A90-300-010	1B	SW,SL SSAA 1-3 B
SFR701	87-024-175-080	0E	SFR,47K H RH0638C
SFR702	87-024-176-080	0E	SFR,100K H RH0638C
SFR703	87-024-175-080	0E	SFR,47K H RH0638C
X201	84-JP7-609-080	1B	VIB,XTAL 8.00MHZ
X301	87-A70-062-080	1D	VIB,XTAL 40.5MHZ
X501	87-030-270-080	1C	VIB,XTAL 16.9344MHZ HC-49/U03

LED C.B<F>

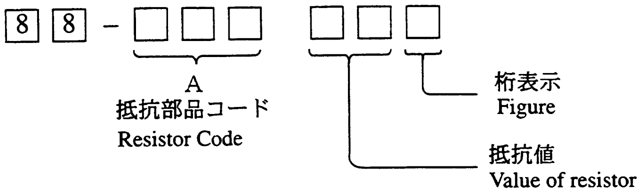
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED901	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>
LED902	87-017-350-080	0E	LED,SEL1550CM PGRN<F>
LED903	87-017-733-080	0E	LED,SEL1250SMTP5 RED<F>

T-T C.B

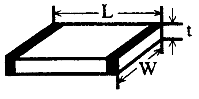
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード ：A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

共通部分は、下記のページを参照して下さい。
Refer to the following pages for the common section.

■ IC DESCRIPTION

CXA1782BQ	24ページ参照 See page 28
CXD2500BQ	56ページ参照 See page 67
MB89627	60ページ参照 See page 70
BU1417AK	62ページ参照 See page 72
CL484	64ページ参照 See page 74

■ IC BLOCK DIAGRAM

TA7291S	23ページ参照 See page 23
BA6791FP	55ページ参照 See page 55

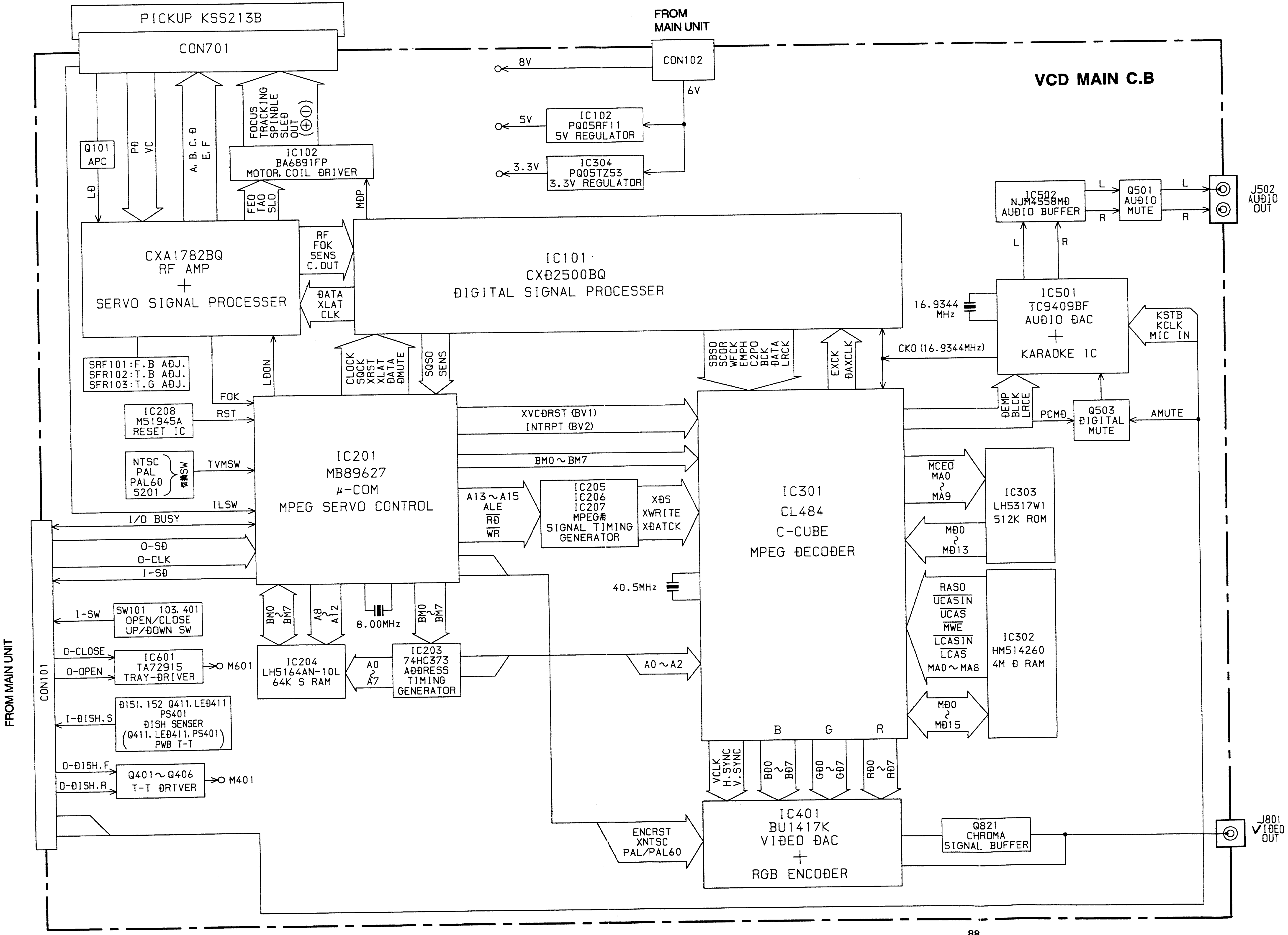
■ MECHANICAL EXPLODED VIEW/PARTS LIST

40ページ参照
See page 40

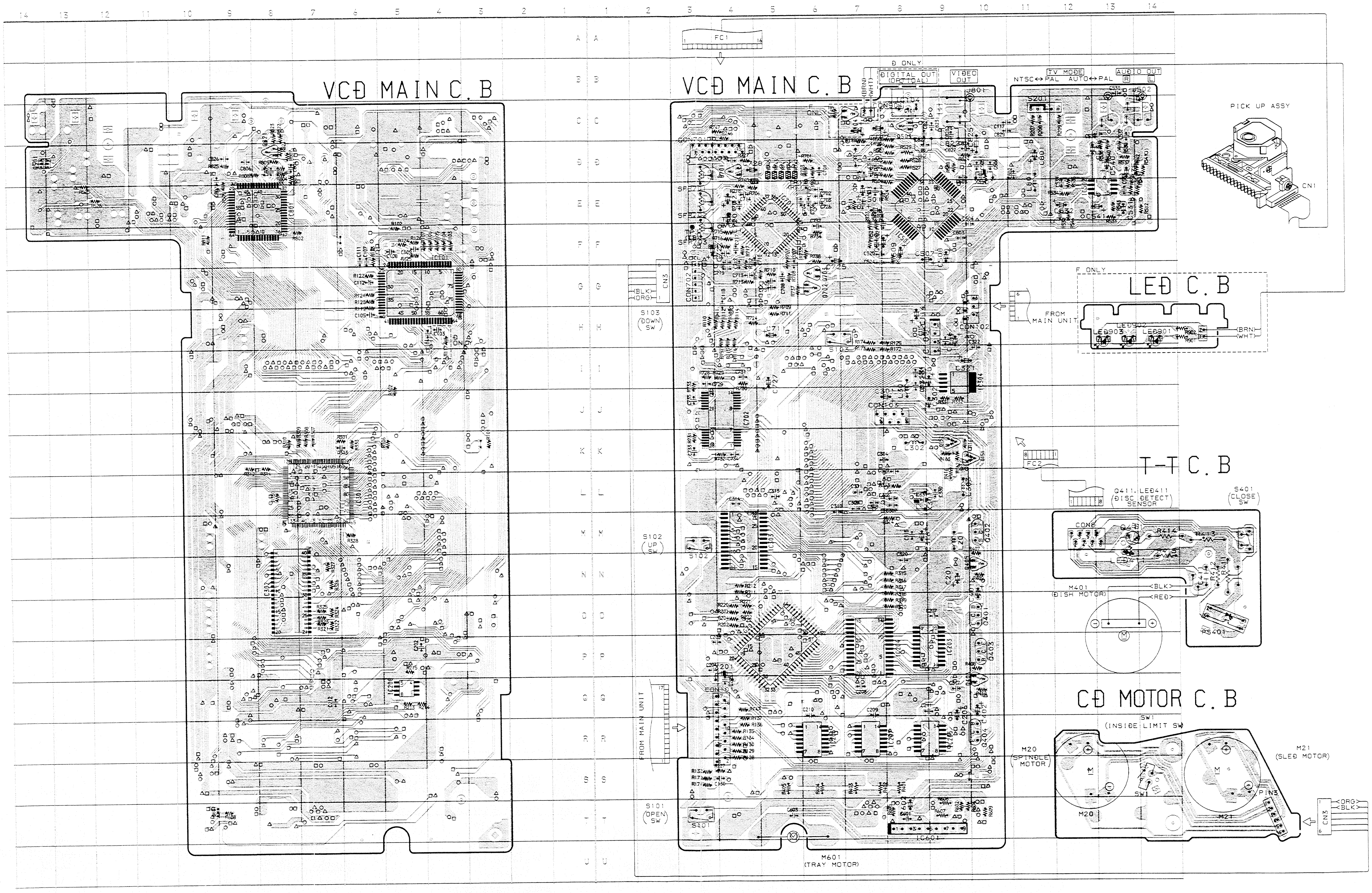
■ CD MECHANISM EXPLODED VIEW/PARTS LIST

83ページ参照
See page 83

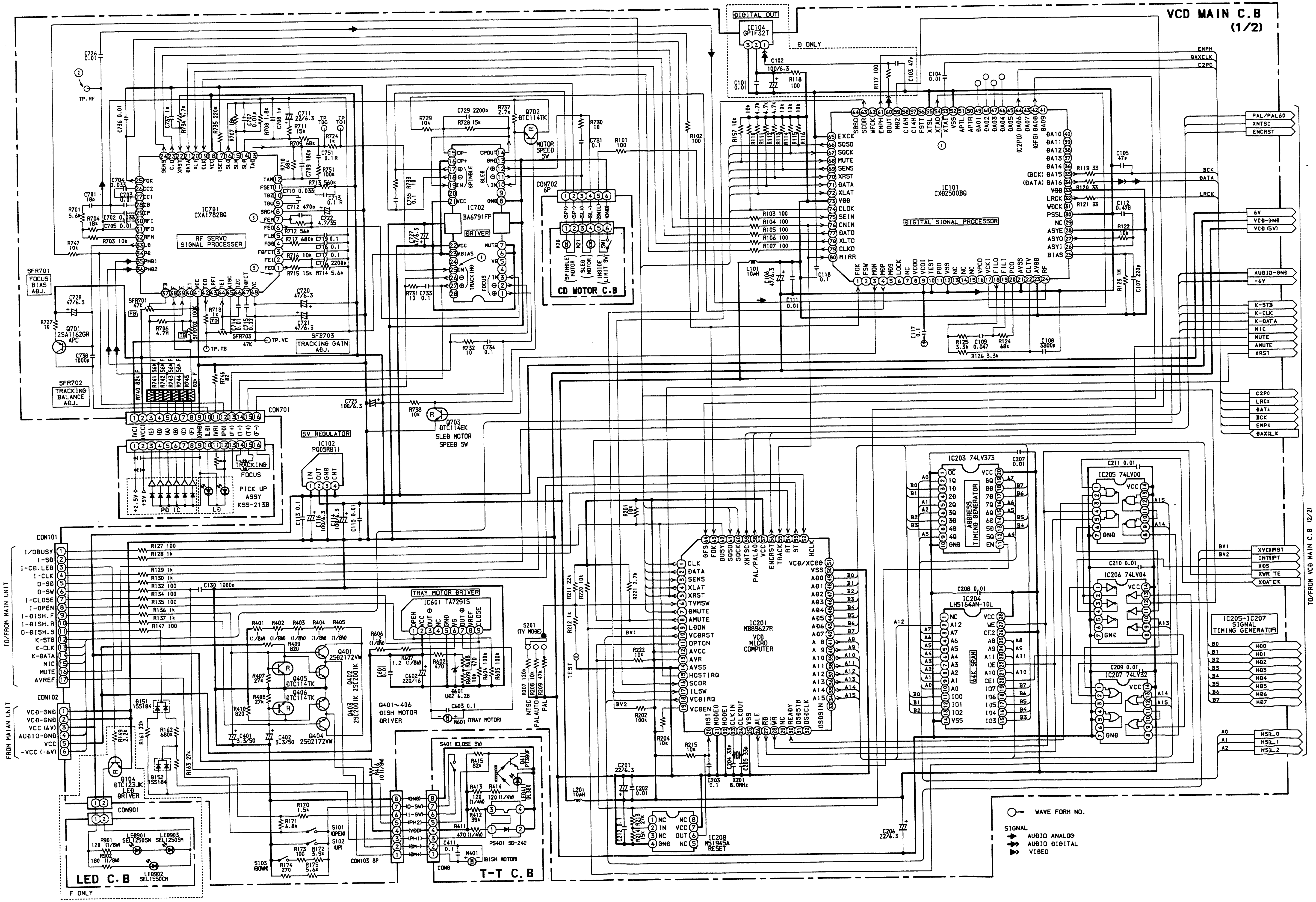
BLOCK DIAGRAM


PICKUP KSS213B
CON701
FROM MAIN UNIT
CON102
8V
6V
5V
IC102
PQ05RF11
5V REGULATOR
3.3V
IC304
PQ05TZ53
3.3V REGULATOR
VCD MAIN C.B
Q101
APC
PD
VC
A, B, C, D
E, F
FOCUS
TRACKING
SPINDLE
SLED
OUT
(⊕⊖)
IC102
BA6891FP
MOTOR, COIL DRIVER
LD
FEO
TAO
SLO
MDP
CXA1782BQ
RF AMP
+
SERVO SIGNAL PROCESSER
RF
FOK
SENS
C.OUT
DATA
XLAT
CLK
IC101
CXD2500BQ
DIGITAL SIGNAL PROCESSER
SRF101:F.B ADJ.
SFR102:T.B ADJ.
SFR103:T.G ADJ.
LDON
FOK
CLOCK
SQCK
XRST
XLAT
DATA
DMUTE
SQSO
SENS
SBSO
SCOR
WFCK
EMPH
C2PO
BCK
DATA
LRCK
EXCK
DAXCLK
CKO (16.9344MHz)
16.9344
MHz
IC502
NJM4558MD
AUDIO BUFFER
L
R
Q501
AUDIO
MUTE
J502
AUDIO
OUT
IC501
TC9409BF
AUDIO DAC
+
KARAOKE IC
KSTB
KCLK
MIC IN
DEMP
BLCK
LRCE
PCMD
Q503
DIGITAL
MUTE
AMUTE
IC208
M51945A
RESET IC
RST
NTSC
PAL
PAL60
S201
切換SW
TVMSW
ILSW
I/O BUSY
O-SD
O-CLK
I-SD
IC201
MB89627
μ-COM
MPEG SERVO CONTROL
XVCDRST (BV1)
INTRPT (BV2)
BM0～BM7
A13～A15
ALE
RD
WR
IC205
IC206
IC207
MPEG用
SIGNAL TIMING
GENERATOR
XDS
XWRITE
XDATCK
IC301
CL484
C-CUBE
MPEG DECODER
MCEO
MA0
～
MA9
MD0
～
MD13
IC303
LH5317W1
512K ROM
RASO
UCASIN
UCAS
MWE
LCASIN
LCAS
MA0～MA8
IC302
HM514260
4M D RAM
MD0
～
MD15
40.5MHz
CON101
I-SW
SW101 103, 401
OPEN/CLOSE
UP/DOWN SW
BM0～BM7
A8～A12
8.00MHz
BM0～BM7
O-CLOSE
O-OPEN
IC601
TA72915
TRAY-DRIVER
M601
IC204
LH5164AN-10L
64K S RAM
A0～A7
IC203
74HC373
ADDRESS
TIMING
GENERATOR
A0～A2
I-DISH.S
D151, 152 Q411, LED411
PS401
DISH SENSER
(Q411, LED411, PS401
PWB T-T)
O-DISH.F
O-DISH.R
Q401～Q406
T-T DRIVER
M401
B
G
R
VCLK
H.SYNC
V.SYNC
BD0～BD7
GD0～GD7
RD0～RD7
ENCRST
XNTSC
PAL/PAL60
IC401
BU1417K
VIDEO DAC
+
RGB ENCODER
Q821
CHROMA
SIGNAL BUFFER
J801
VIDEO
OUT
FROM MAIN UNIT

WIRING


VCD MAIN C.B
VCD MAIN C.B
FC1
D ONLY
DIGITAL OUT (OPTICAL)
VIDEO OUT
TV MODE
NTSC↔PAL AUTO↔PAL
AUDIO OUT
R
L
PICK UP ASSY
CN1
F ONLY
LED C.B
FROM MAIN UNIT
LED903
LED902
LED901
(BRN)
(WHT)
CN3
(BLK)
(ORG)
S103 (DOWN SW)
S102 (UP SW)
S101 (OPEN SW)
FROM MAIN UNIT
M601 (TRAY MOTOR)
T-T C.B
FC2
Q411, LED411 (DISC DETECT SENSOR)
S401 (CLOSE SW)
M401 (DISH MOTOR)
<BLK>
<RED>
PS401
CD MOTOR C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
M20
M21
PIN3
CN3
<ORG>
<BLK>

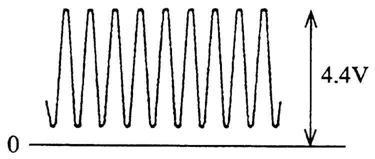
SCHEMATIC DIAGRAM-1


VCD MAIN C.B
(1/2)
DIGITAL OUT
IC104 GP1F32T
D ONLY
IC101 CXD2500BQ
DIGITAL SIGNAL PROCESSOR
IC701 CXA1782BQ
RF SERVO SIGNAL PROCESSER
IC702 BA6791FP
DRIVER
MOTOR SPEED SW
Q702 DTC114TK
CON702 6P
CD MOTOR C.B
SPINDLE MOTOR
SLED MOTOR
INSIDE LIMIT SW
SFR701 FOCUS BIAS ADJ.
SFR702 TRACKING BALANCE ADJ.
SFR703 TRACKING GAIN ADJ.
Q701 2SA1162GR APC
TP.RF
TP.TE
TP.FE
TP.VC
TP.TB
CON701
5V REGULATOR
IC102 PQ05RD11
Q703 DTC114EK SLED MOTOR SPEED SW
TRACKING
FOCUS
PICK UP ASSY KSS-213B
PD IC
LD
CON101
I-DBUSY
I-SD
I-CD.LED
I-CLK
O-SD
O-SW
I-CLOSE
I-OPEN
I-DISH.F
I-DISH.R
O-DISH.S
K-STB
K-CLK
K-DATA
MIC
MUTE
AVREF
TO/FROM MAIN UNIT
CON102
VCD-GND
VCD-GND
VCC (6V)
AUDIO-GND
VCC
-VCC (-6V)
FROM MAIAN UNIT
D151 1SS184
D152 1SS184
Q104 DTC123JK LED DRIVER
CON901
LED C.B
LED901 SEL1250SM
LED903 SEL1250SM
LED902 SEL1550CM
F ONLY
TRAY MOTOR DRIVER
IC601 TA7291S
Q401 2SD2172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SD2172VW
Q405 DTC114TK
Q406 DTC114TK
Q401~406 DISH MOTOR DRIVER
D601 UDZ 6.2B
M601 (TRAY MOTOR)
S101 (OPEN)
S102 (UP)
S103 (DOWN)
CON103 8P
S401 CLOSE SW
Q411 PT380F
LED411 GL380
PS401 SG-240
M401 (DISH MOTOR)
CON8
T-T C.B
S201 (TV MODE)
NTSC
PAL AUTO
PAL
TEST
IC201 MB89627R
VCD MICRO COMPUTER
IC208 M51945A RESET
X201 8.0MHz
IC203 74LV373
ADDRESS TIMING GENERATOR
IC204 LH5164AN-10L
64K SRAM
IC205 74LV00
IC206 74LV04
IC207 74LV32
IC205~IC207 SIGNAL TIMING GENERATOR
PAL/PAL60
XNTSC
ENCRST
EMPH
DAXCLK
C2PO
BCK
DATA
LRCK
6V
VCD-GND
VCD (5V)
AUDIO-GND
-6V
K-STB
K-CLK
K-DATA
MIC
MUTE
AMUTE
XRST
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
BV1
BV2
XVCDRST
INTRPT
XDS
XWRITE
XDATCK
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
HSEL0
HSEL1
HSEL2
TO/FROM VCD MAIN C.B (2/2)
WAVE FORM NO.
SIGNAL
AUDIO ANALOG
AUDIO DIGITAL
VIDEO

WAVE FORM

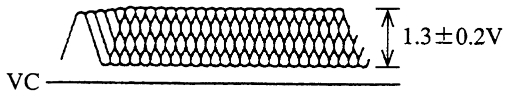
①
SYSTEM CLOCK
f=16.9344MHz
IC101 Pin ⑰ (XCKI)
IC101 Pin (53) (XTAI)

VOLT/DIV: 2V
TIME/DIV: 0.1mS



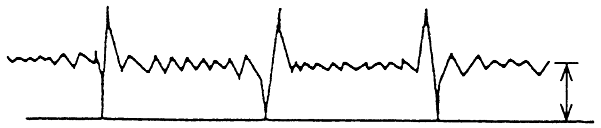
②
RF
IC701 Pin ㉛ (RFO)

VOLT/DIV: 500mV
TIME/DIV: 0.5μS



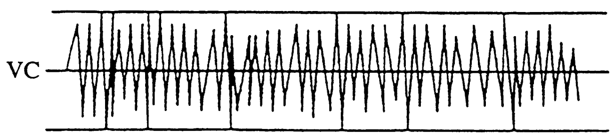
③
FOCUS
IC701 Pin ⑥ (FEO)

VOLT/DIV: 200mV
TIME/DIV: 2mS

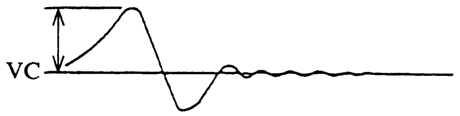


④
TRACKING
IC702 Pin ㉕ (Tracking IN)

TIME/DIV: 1mS

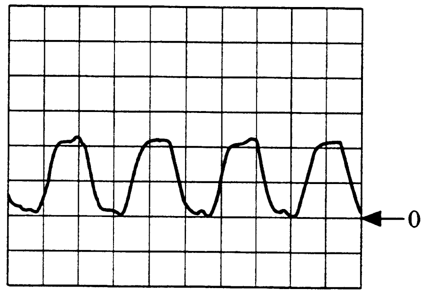


⑤
FOCUS SEARCH
IC701 Pin ① (FEO)



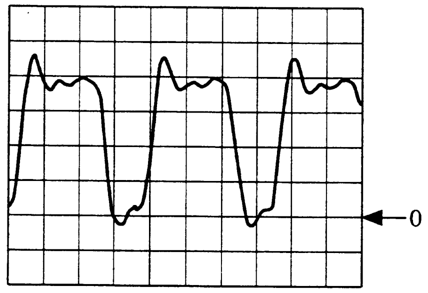
⑥
IC301 Pin ⑲ (XTLIN)
40.5MHz
VCD PLAY • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



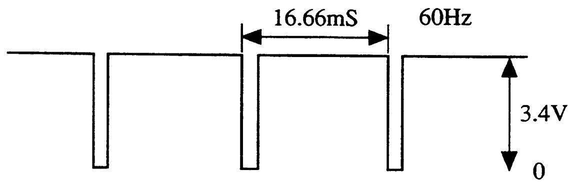
⑦
IC301 Pin (99) (VCLK)
13.5MHz±675Hz
VCD PLAY • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS

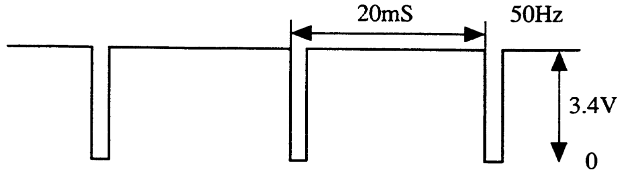


⑧
IC301 Pin (95) (V SYNC)
VCD, PLAY
TV MODE: • NTSC
• PAL AUTO

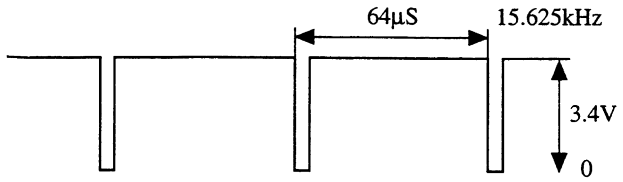
VOLT/DIV: 1V
TIME/DIV: 10nS



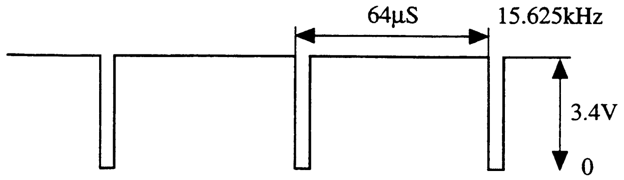
VCD, PLAY
TV MODE: • PAL



⑨
IC301 Pin (96) (H SYNC)
VCD, PLAY
TV MODE: • NTSC
• PAL AUTO

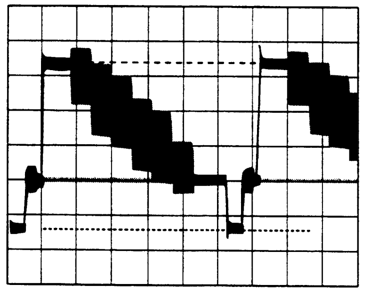


VCD, PLAY
TV MODE: • PAL

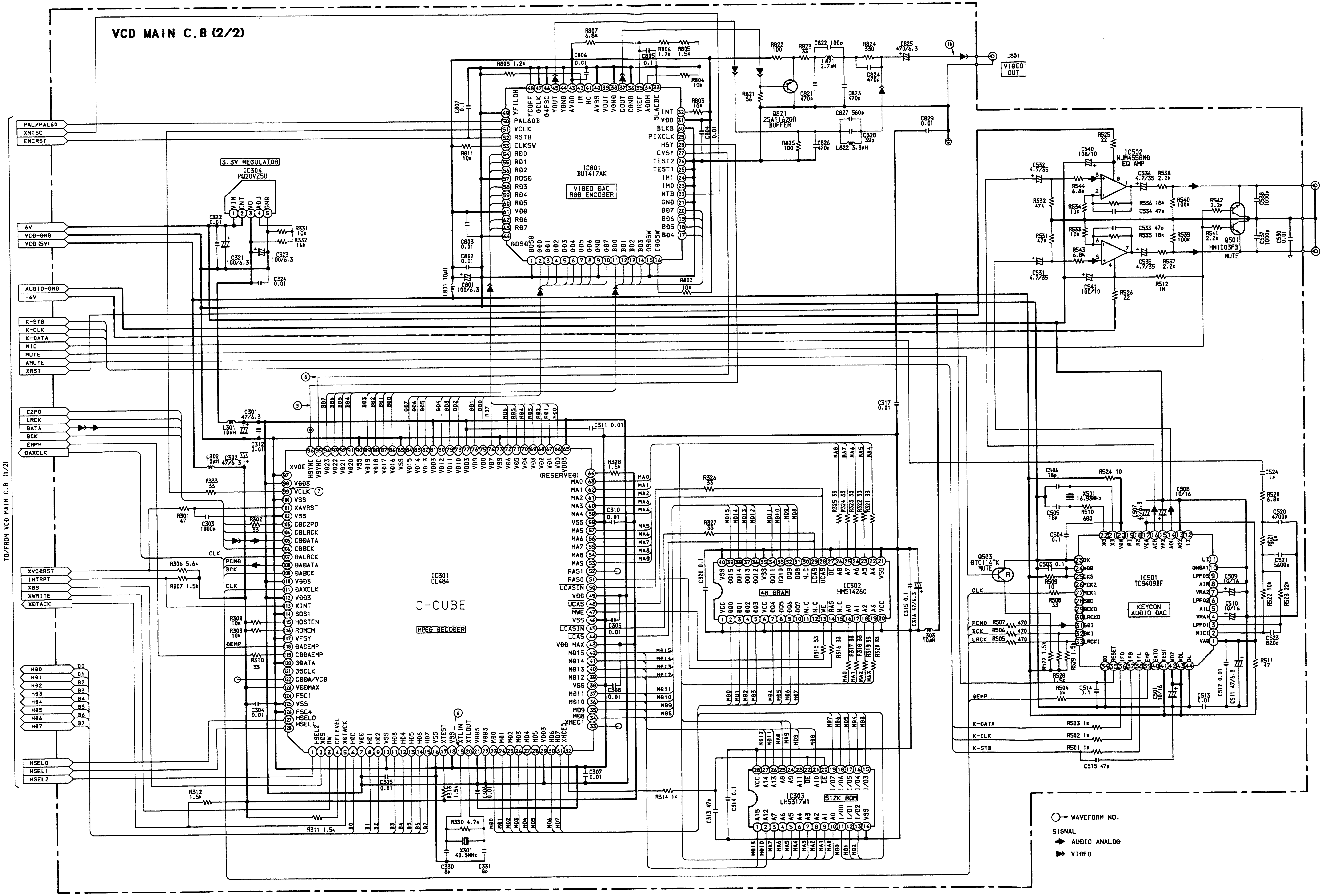


⑩
VIDEO OUT (C825 ⊖ side)
VCD PLAY: CD-T05 TRACK4
TV MODE: • NTSC

VOLT/DIV: 200mV
TIME/DIV: 10μS



SCHEMATIC DIAGRAM-2


VCD MAIN C.B (2/2)
TO/FROM VCD MAIN C.B (1/2)
IC801
BU1417AK
VIDEO DAC
RGB ENCODER
3.3V REGULATOR
IC304
PQ20VZ5U
Q821
2SA1162OR
BUFFER
J801
VIDEO OUT
IC502
NJM4558MD
EQ AMP
Q501
HN1C03FB
MUTE
J502
AUDIO OUT
IC301
CL484
C-CUBE
MPEG DECODER
IC302
HM514260
4M DRAM
IC303
LH5317W1
512K ROM
Q503
DTC114TK
MUTE
IC501
TC9409BF
KEYCON
AUDIO DAC
X501
16.93MHz
X301
40.5MHz
PAL/PAL60
XNTSC
ENCRST
6V
VCD-GND
VCD (5V)
AUDIO-GND
-6V
K-STB
K-CLK
K-DATA
MIC
MUTE
AMUTE
XRST
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
XVCDRST
INTRPT
XDS
XWRITE
XDTACK
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
HSEL0
HSEL1
HSEL2
WAVEFORM NO.
SIGNAL
AUDIO ANALOG
VIDEO

IC DESCRIPTION

IC, TC9409BF

端子番号	端子名称	I/O	機 能 説 明
1	VDA1	—	ADC電源。
2	MICI	I	MIC入力用LPF入力。
3	LPFO1	O	MIC入力用LPF出力。
4	VRA1	—	ADC基準電圧。
5	AIL	I	ライン入力L-ch用LPF入力。
6	LPFO2	O	ライン入力L-ch用LPF出力。
7	VRA2	—	ADC用基準電源。
8	AIR	I	ライン入力R-ch用LPF入力。
9	LPFO3	O	ライン入力R-ch用LPF出力。
10	GNDA1	—	ADCグランド。
11	LI	I	L-chアナログ加算入力。(未使用時オープン)
12	LZ	O	L-chデジタル入力ゼロ検出。
13	GNDA2	—	DACグランド。
14、16	AOL、AOR	O	DAC出力L-ch、DAC出力R-ch。
15	VR2	—	DAC基準電圧。
17	VDA2	—	DAC電源。
18	RZ	O	R-chデジタル入力ゼロ検出。
19	RI	I	R-chアナログ加算入力。(未使用時オープン)
20	VDX	—	発振部電源。
21	XI	I	発振子接続端子。(256、384、512、768fsのいずれか)
22	XO	O	発振子接続端子。
23	GNDX	—	発振部グランド。
24、42	VDD1、VDD2	—	デジタル電源。
25	CKS	I	マスタクロック選択。(“H”: 256/384fs “L”: 512/768fs)
26	MCK2	O	発振クロック1/2分周出力。
27	MCK1	O	発振クロック出力。
28	SDO	O	デジタルオーディオデータ出力。
29	BCKO	O	ビットクロック出力。
30	LRCKO	O	チャネルクロック出力。
31	SDI	I	デジタルオーディオデータ入力。
32	BCKI	I	ビットクロック入力。
33	LRCKI	I	チャネルクロック入力。
34	GNDD	—	デジタルグランド。
35	$\overline{\text{RESET}}$	I	リセット。(“L”でリセット)
36	IFD	I	マイコンI/Fデータ入力。
37	IFS	I	マイコンI/Fデータシフトクロック入力。
38	IFL	I	マイコンI/Fラッチパルス入力。
39	EMP	I	ディエンファシス設定。(“H”でディエンファシスフィルタON)
40	EXTO	O	拡張出力端子。
41	$\overline{\text{TEST}}$	I	テストモード設定。(通常“H”: 固定)
43	VDL	—	DRAM用デジタル電源。
44	GNDL	—	DRAM用デジタルグランド。

IC, TC9409BF

Pin No.	Pin Name	I/O	Description
1	VDA1	—	ADC power supply.
2	MICI	I	Input to MIC input low-pass filter.
3	LPFO1	O	Output from MIC input low-pass filter.
4	VRA1	—	ADC reference voltage.
5	AIL	I	Input to LINE input L-ch low-pass filter.
6	LPFO2	O	Output from LINE input L-ch low-pass filter.
7	VRA2	—	ADC reference power supply.
8	AIR	I	Input to LINE input R-ch low-pass filter.
9	LPFO3	O	Output from LINE input R-ch low-pass filter.
10	GNDA1	—	ADC ground.
11	LI	I	Input to L-ch analog adder. (Open when not used.)
12	LZ	O	Zero is detected when L-ch digital is input.
13	GNDA2	—	DAC ground.
14, 16	AOL, AOR	O	DAC output L-ch. DAC output R-ch.
15	VR2	—	DAC reference voltage.
17	VDA2	—	DAC power supply.
18	RZ	O	Zero is detected when R-ch digital is input.
19	RI	I	Input to R-ch analog adder. (Open when not used.)
20	VDX	—	Oscillator block power supply.
21	XI	I	Terminal where external oscillator is connected. (Any of 256, 384, 512 or 768 fs).
22	XO	O	Terminal where external oscillator is connected.
23	GNDX	—	Oscillator ground.
24, 42	VDD1, VDD2	—	Digital power supply.
25	CKS	I	Master clock selection. (H: 256/384 fs, L: 512/768 fs).
26	MCK2	O	Oscillator clock divided-by-2 output.
27	MCK1	O	Oscillator clock output.
28	SDO	O	Digital audio data output.
29	BCKO	O	Bit clock output.
30	LRCKO	O	Channel clock output.
31	SDI	I	Digital audio data input.
32	BCKI	I	Bit clock input.
33	LRCKI	I	Channel clock input.
34	GNDD	—	Digital ground.
35	$\overline{\text{RESET}}$	I	Reset. (Reset at L).
36	IFD	I	Microprocessor I/F data input.
37	IFS	I	Microprocessor I/F data shift clock input.
38	IFL	I	Microprocessor I/F latch pulse input.
39	EMP	I	De-emphasis setting. (De-emphasis filter ON at H).
40	EXTO	O	Expansion output terminal.
41	$\overline{\text{TEST}}$	I	Test mode setting. (Fixed to normally H).
43	VDL	—	Digital power supply for DRAM.
44	GNDL	—	Digital ground for DRAM.

TEST MODE

● テストモードについて

KARAOKE KEY＋POWER KEYでTEST MODEに入り全灯表示。

FOCUS........PLAY KEYでMODEに入る。
DISC無時→ フォーカスONせずにフォーカスサーチを続ける
DISC有時→ 通常PLAY

STOP KEYでフォーカスサーチorPLAY終る。

※ TEST MODE時はDISC CHANGEはしない

1度POWER OFFするとTEST MODEから抜ける。

● How to Enter the Test Mode

Press the KARAOKE key and the POWER key at the same time. Then all indicators turn on.

Press the PLAY key, and the machine enters the focus search or normal play as follows.

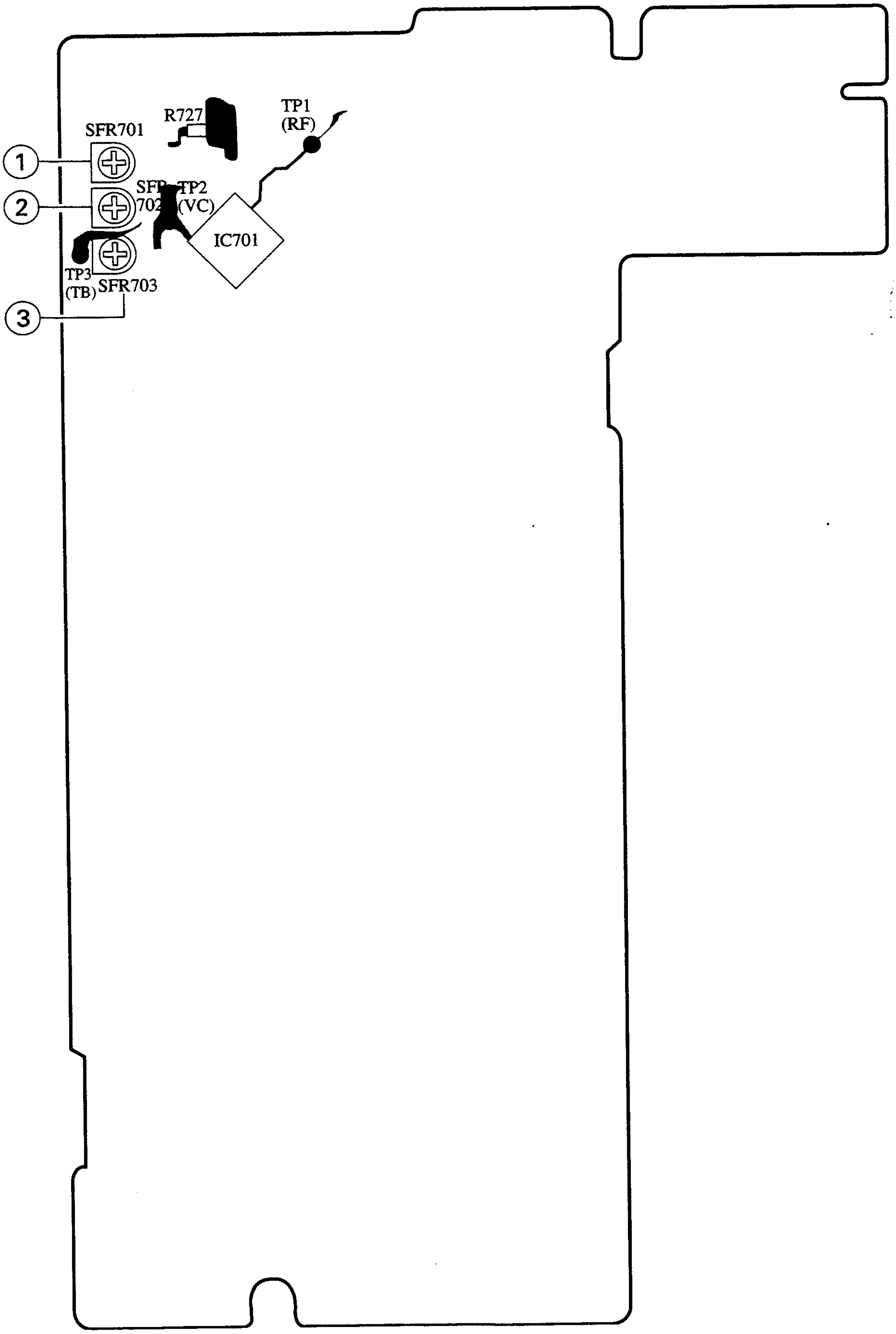
When disk is not inserted:
Focus search is continued without locking-n the focus servo.
When disk is inserted, the machine enters the normal play.

To terminate the focus search or normal play, press the STOP key.

* Do not change discs during the Test mode.

The machine can exit the Test mode by turning off the main power.

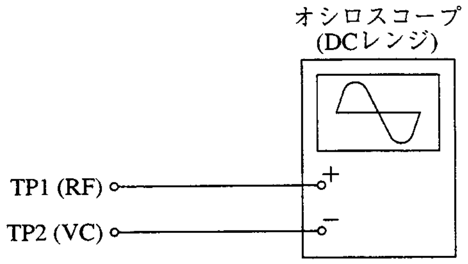
VCD MAIN C.B (PATTERN SIDE)


R727
TP1
(RF)
SFR701
①
②
SFR
702
TP2
(VC)
IC701
TP3
(TB)
SFR703
③

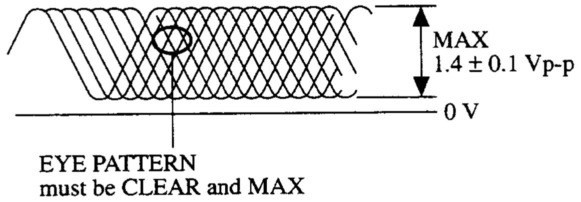
注意:
- (10: 1) のプローブを接続して、調整して下さい。
- 各調整には、オシロスコープの⊖側をTP2 (VC) に接続して下さい。

1. フォーカスバイアス調整

この調整は、光学系ブロックを交換修理した場合に調整すること。

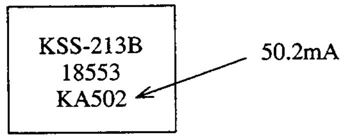


1) テストポイントTP1 (RF)、TP2 (VC) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が最大となり、かつ中央のひし形が、鮮明になるようにSFR701を調整する。



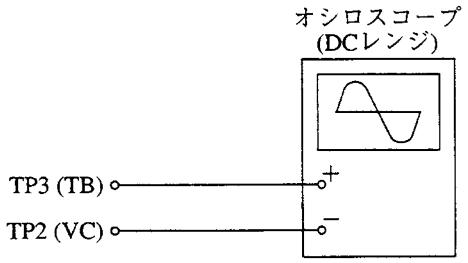
VOLT/DIV: 50mV
TIME/DIV: 0.5 μS

注意: レーザー電流の確認はR727 (10Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

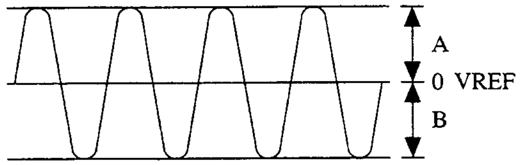


$$\text{レーザー電流Iop} = \frac{\text{R727の両端電圧}}{10\Omega}$$

2. トラッキング・バランス調整



1) テストポイントTP3 (TB)、TP2 (VC) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて、▶PLAY状態にする。
4) SFR703を回しトラッキングゲインを絞る。
5) オシロスコープのトラバース波形が、下図のように上下対称になるようにSFR702を調整する。
6) 調整後、各端子のアースリード線をはずす。



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. トラッキングゲイン調整

この調整を正確に行うためには、サーボアナライザーが必要です。しかし、このゲインはマージンを持っているため、通常では少し位ずれていてもほとんど問題はありません。したがってこの調整は行わないで下さい。フォーカス/トラッキングゲインは2軸デバイス動作時の機械的雑音と機械的ショックに対するピックアップの追従性を決めています。しかし、これは互いに相反するため、両方を満足する点に調整してあります。

- ● ゲインを上げると2軸デバイス動作時の雑音が増加する。
- ● ゲインを下げると機械的ショックに弱くなり音飛びを起こしやすくなる。

そしてゲインの調整がずれていると次頁の様な症状が出ます。

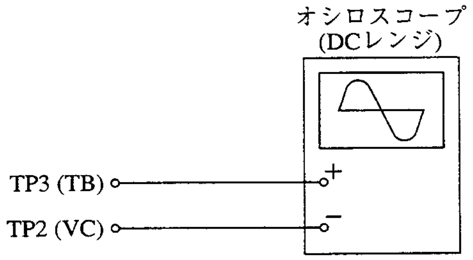
ゲイン 症状	(フォーカス)	トラッキング
● STOP → ▶PLAY 時, 又は自動選曲時 (⏮, ⏭ボタンを押したとき) に演奏が始まるまでの時間が長くなる。(通常は2秒位です。)	低い	低い 又は 高い
● STOP → ▶PLAY 時, 又は自動選曲時 (⏮, ⏭ボタンを押したとき) に演奏が始まらないでディスクが回転を続ける。	——	低い
● STOP → ▶PLAY 時, しばらくすると回転が止まる。	低い又は高い	——
● 演奏中に音がとぎれる。又, タイムカウンターの表示が進まなくなる。	——	低い
● 2軸ディバイス動作時のノイズが多くなる。	高い	高い

なお、簡易調整として下記の方法があります。

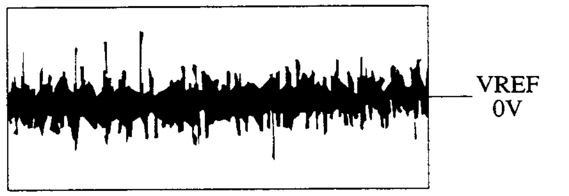
—— 簡易調整 ——

注意: 正確には調整できないため、調整を行う前にボリュームの位置を憶えておいて、簡易調整を行った後のボリュームの位置と比較して、そのずれが少ないときは元のボリュームの位置に戻しておいて下さい。

調整方法:



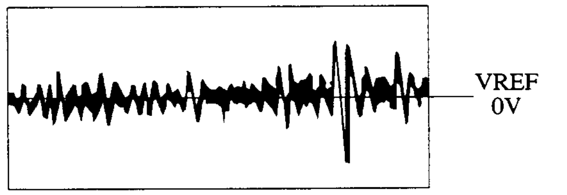
1. セットを水平に置く。
(セットを水平に置かないと2軸デバイスが重力の影響を受け、調整出来ません。)
2. テストディスクTCD-782 (YEDS-18)を入れて2曲目を再生する。
3. オシロスコープをTP3 (TB)、TP2 (VC) に接続する。
4. オシロスコープの波形が下図の波形になるようにSFR703を調整する。(トラッキングゲイン調整)



VOLT/DIV: 50mV
TIME/DIV: 1mS

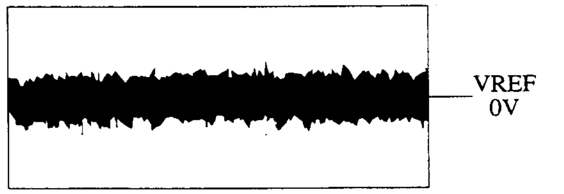
● 悪い例

トラッキングゲインが低い時
(調整されている波形と比べて基本波が表れるようになる。)



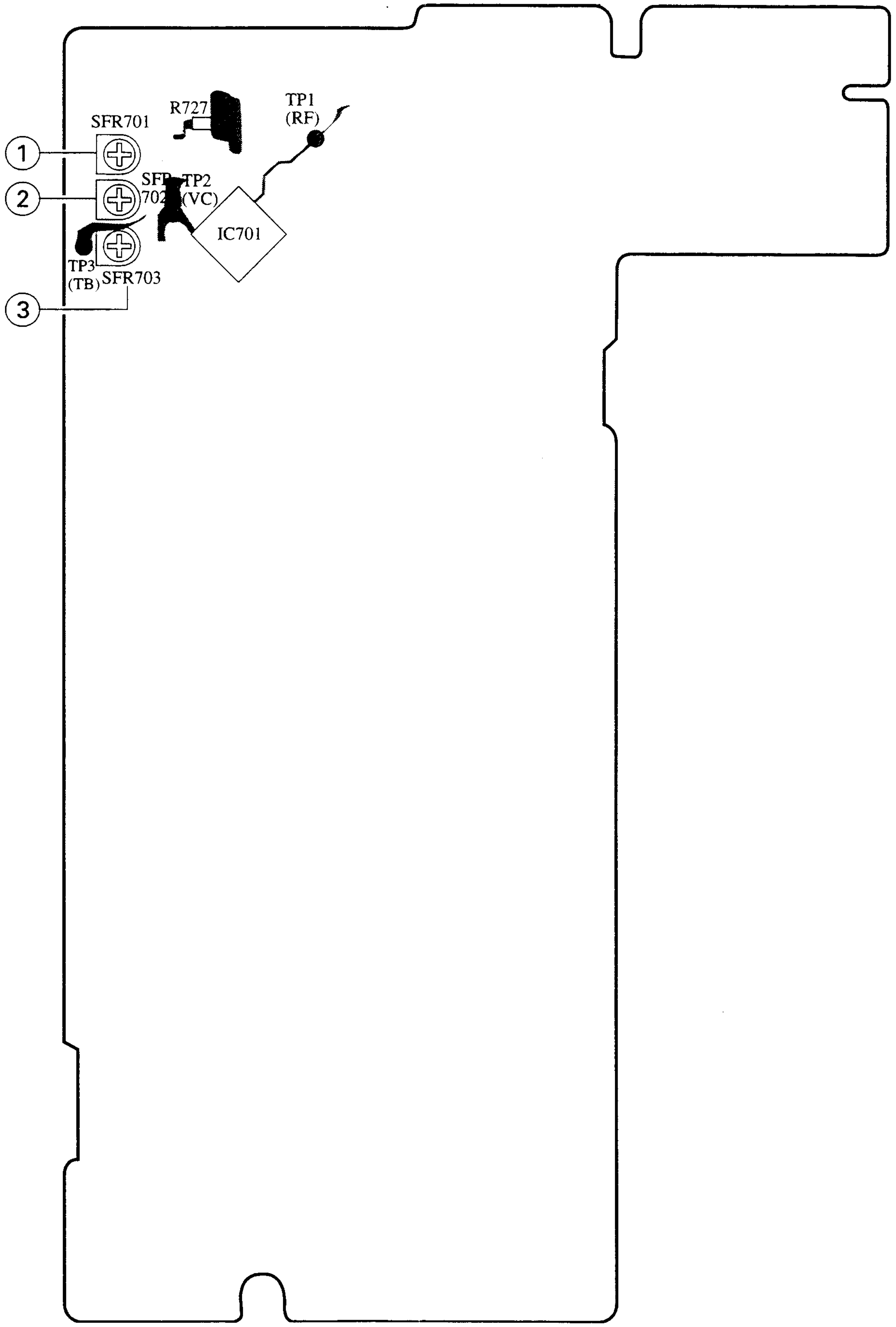
VOLT/DIV: 50mV
TIME/DIV: 1mS

トラッキングゲインが高い時
(ゲインが低い時と比べて基本波が高い)



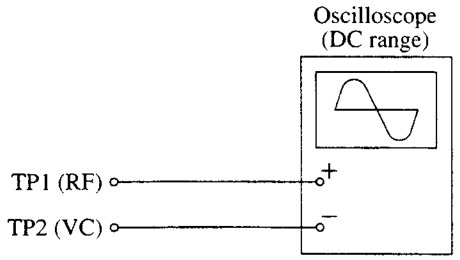
VOLT/DIV: 50mV
TIME/DIV: 1mS

VCD MAIN C.B (PATTERN SIDE)

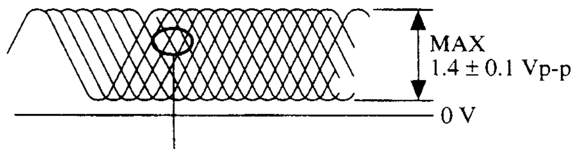


Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VC).

1. Focus Bias Adjustment
   Make the focus bias adjustment when replacing and repairing the optical block.



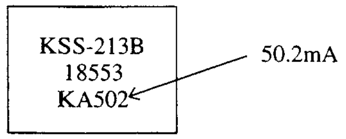
1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VC).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR701 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX

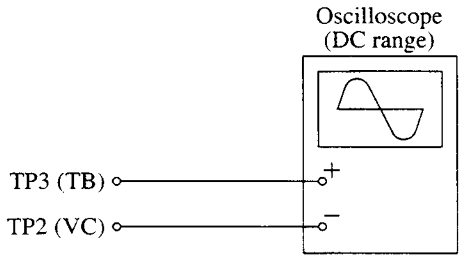
VOLT/DIV: 50mV
TIME/DIV: 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R727 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

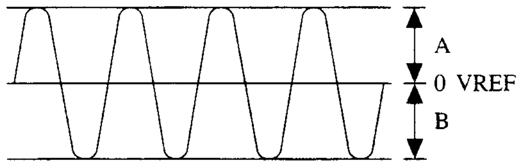


$$\text{Laser current Iop} = \frac{\text{Voltage across R727}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TB) and TP2 (VC).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR703 to decrease the tracking gain..
5) Adjust SFR702 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
  When the gain adjustment is off, the symptoms below appear.

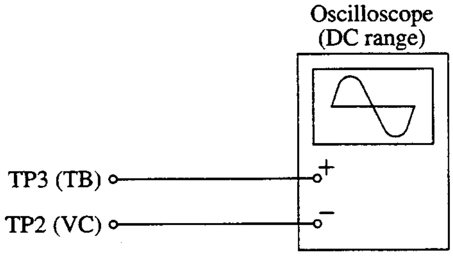
Symptoms \ Gain	(Focus)	Tracking
● The time until music starts becomes longer for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP →▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

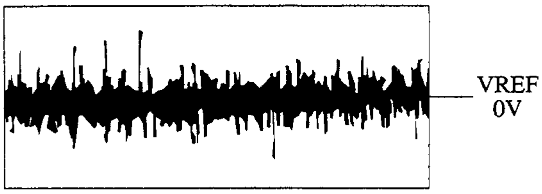
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



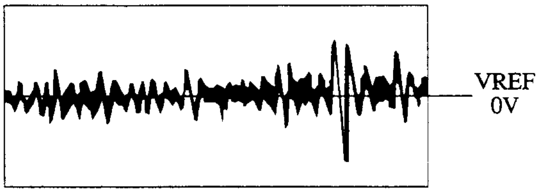
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TB), TP2 (VC).
4) Adjust SFR703 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

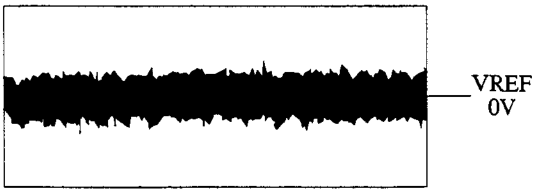
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

MODEL NO. 6ZG-1S/S1 (D, F)

ELECTRICAL MAIN PARTS LIST

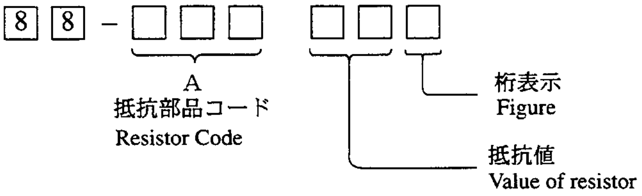
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010	1E	C-IC,CXA1992AR
	87-A20-546-010	2A	C-IC,CXD2589Q
	87-A20-592-040	1A	C-IC,M51943 AML
	87-070-305-010	1F	IC,BA6897S
	87-001-982-010	1C	IC,TA7291S
TRANSISTOR			
	89-406-555-080	0E	TR,2SD655 (0.5W)<S>
	87-026-463-080	0E	TR,2SA933S (0.3W)
	89-421-722-380	0E	TR,2SD2172V/W
	89-320-011-080	0E	TR,2SC2001 (15W)
	87-026-239-080	0E	TR,DTC114TK (0.2W)<S1>
	87-026-223-080	0E	TR,DTC143TK<S>
	89-110-155-080	0E	TR,2SA1015(0.4W)
	87-026-608-080	0E	C-TR,DTC 123 JK<F>
	89-327-125-080	0E	CHIP TR,2SC2712GR<D>
DIODE			
	87-020-465-080	0E	DIODE,1SS133 (110MA)
CD MAIN C.B			
C1	87-010-196-020	0E	C-CAP,S 0.1-25 F<S>
C2	87-010-260-080	0E	CAP, ELECT 47-25V<S>
C4	87-010-197-020	0E	C-CAP,S 0.01-25 B<S>
C101	87-010-263-040	0E	CAP,E 100-10
C102	87-010-178-020	0E	C-CAP,S 1000P-50 B
C103	87-010-550-040	0E	CAP,E 100-6.3 GAS
C104	87-010-182-020	0E	C-CAP,S 2200P-50 B
C105	87-010-198-020	0E	C-CAP,S 0.022-25 B
C106	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C107	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C108	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C109	87-010-497-040	0E	CAP,E 4.7-35 GAS
C110	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C111	87-010-197-020	0E	C-CAP,S 0.01-25 B
C112	87-010-402-040	0E	CAP,E 2.2-50 SME
C113	87-010-382-040	0E	CAP,E 22-25 SME
C114	87-010-213-020	0E	C-CAP,S 0.015-25 B
C115	87-010-263-040	0E	CAP,E 100-10
C116	87-010-197-020	0E	C-CAP,S 0.01-25 B
C117	87-016-369-020	0E	C-CAP,S 0.033-25 B K
C118	87-010-197-020	0E	C-CAP,S 0.01-25 B
C119	87-016-369-020	0E	C-CAP,S 0.033-25 B K
C120	87-010-197-020	0E	C-CAP,S 0.01-25 B
C121	87-010-494-040	0E	CAP,E 1-50 GAS
C122	87-010-154-020	0E	C-CAP,S 10P-50 CH
C123	87-010-154-020	0E	C-CAP,S 10P-50 CH
C124	87-010-154-020	0E	C-CAP,S 10P-50 CH
C125	87-010-596-020	0E	C-CAP,S 0.047-16 RK
C126	87-010-596-020	0E	C-CAP,S 0.047-16 RK
C127	87-012-140-020	0E	C-CAP,S 470P-50 CH
C128	87-010-596-020	0E	C-CAP,S 0.047-16 RK
C129	87-010-198-020	0E	C-CAP,S 0.022-25 B
C130	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C131	87-010-550-040	0E	CAP,E 100-6.3 GAS
C132	87-010-550-040	0E	CAP,E 100-6.3 GAS
C133	87-012-158-020	0E	C-CAP,S 390P-50 J CH
C150	87-010-145-020	0E	C-CAP,S 1P-50 C CH
C202	87-010-596-020	0E	C-CAP,S 0.047-16 RK
C203	87-010-188-020	0E	C-CAP,S 6800P-50 B
C204	87-012-156-020	0E	C-CAP,S 220P-50 CH
C205	87-018-134-080	0E	CAPACITOR,TC-U 0.01-16
C206	87-010-400-040	0E	CAP,E 0.47-50
C207	87-010-197-020	0E	C-CAP,S 0.01-25 B
C208	87-010-318-020	0E	C-CAP,S 47P-50 CH<D>
C209	87-012-154-020	0E	C-CAP,S 150P-50 J CH GRM
C210	87-012-154-020	0E	C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020	0E	C-CAP,S 680P-50 J SL
C212	87-010-176-020	0E	C-CAP,S 680P-50 J SL
C213	87-010-382-040	0E	CAP,E 22-25 SME
C214	87-010-382-040	0E	CAP,E 22-25 SME
C215	87-010-318-020	0E	C-CAP,S 47P-50 CH
C216	87-010-318-020	0E	C-CAP,S 47P-50 CH
C217	87-010-380-040	0E	CAP,E 47-16 SME
C218	87-010-197-020	0E	C-CAP,S 0.01-25 B
C219	87-010-196-020	0E	C-CAP,S 0.1-25 F
C220	87-010-370-040	0E	CAP,E 330-6.3 SME
C221	87-010-197-020	0E	C-CAP,S 0.01-25 B
C222	87-010-186-020	0E	C-CAP,S 4700P-50 B
C223	87-016-081-020	0E	C-CAP,S 0.1-16 RK
C226	87-015-785-020	0E	C-CAP,0.1-25 F<S1>
C231	87-018-209-080	0E	CAP, CER 0.1-50V<S>
C401	87-010-403-080	0E	CAP, ELECT 3.3-50V
C402	87-010-403-040	0E	CAP,E 3.3-50 SME
C501	87-016-459-040	0E	CAP,E 470-10 SMG
C502	87-010-197-020	0E	C-CAP,S 0.01-25 B
C503	87-010-263-040	0E	CAP,E 100-10
C504	87-010-196-020	0E	C-CAP,S 0.1-25 F
C505	87-010-196-020	0E	C-CAP,S 0.1-25 F
C506	87-010-196-020	0E	C-CAP,S 0.1-25 F
C507	87-010-196-020	0E	C-CAP,S 0.1-25 F
C508	87-016-459-040	0E	CAP,E 470-10 SMG
C509	87-010-196-020	0E	C-CAP,S 0.1-25 F
C510	87-010-196-020	0E	C-CAP,S 0.1-25 F
C601	87-010-197-020	0E	C-CAP,S 0.01-25 B
C602	87-016-251-040	0E	CAP,E 220-16 SMG
C603	87-010-196-020	0E	C-CAP,S 0.1-25 F
C701	87-010-322-020	0E	C-CAP,S 100P-50 CH
C702	87-010-318-020	0E	C-CAP,S 47P-50 CH
C703	87-010-318-020	0E	C-CAP,S 47P-50 CH
C705	87-010-178-020	0E	C-CAP,S 1000P-50 B
C706	87-018-199-080	0E	CAP, CER 3300P
C901	87-010-260-040	0E	CAP,E 47-25 SME<D>
C902	87-010-196-020	0E	C-CAP,S 0.1-25 F<D>
CN3	86-ZG1-609-010	1D	CONN ASSY,6P
FB1	87-003-223-080	0E	FERRITE BEAD BL02RN2
FB2	87-003-223-080	0E	FERRITE BEAD BL02RN2
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
L101	87-003-102-080	0E	COIL, 10UH
L201	87-003-102-080	0E	COIL, 10UH
LED901	87-A40-123-010	0E	LED,SLZ-8128A-01-B<D>
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
⚠PR1	87-026-689-080	0E	PROTECTOR,1A 60V 491<S>
R101	87-022-363-020	0E	C-RES,S 68K-1/10W F
R102	87-022-363-020	0E	C-RES,S 68K-1/10W F
R103	87-022-363-020	0E	C-RES,S 68K-1/10W F
R104	87-022-363-020	0E	C-RES,S 68K-1/10W F
R105	87-022-365-020	0E	C-RES,S 100K-1/10W F
R106	87-022-365-020	0E	C-RES,S 100K-1/10W F
R420	87-029-060-080	0E	RES,FUSE 33-1/4 W<S>
S601	87-036-109-010	1A	PUSH SWITCH
S602	87-036-109-010	1A	PUSH SWITCH
S603	87-036-109-010	1A	PUSH SWITCH
X201	87-A70-046-010	1B	VIB,XTAL 16.934MHZ
LED C.B<F>			
LED701	87-017-733-080	0E	LED,SEL1250SM
LED702	87-017-350-080	0E	LED,SEL1550CM
LED703	87-017-733-080	0E	LED,SEL1250SM
T-T C.B			
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380

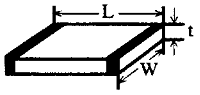
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード : A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

共通部分は、下記のページを参照して下さい。
Refer to the following pages for the common section.

■ IC BLOCK DIAGRAM

TA7291S 23ページ参照
See page 23

BA6897S 23ページ参照
See page 23

■ MECHANICAL EXPLODED VIEW/PARTS LIST

40ページ参照
See page 40

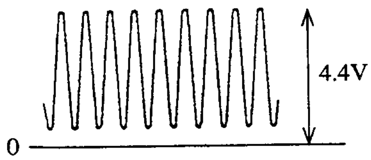
■ CD MECHANISM EXPLODED VIEW/PARTS LIST

42ページ参照
See page 42

WAVE FORM

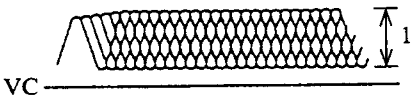
① SYSTEM CLOCK
f=16.9344MHz

VOLT/DIV: 2V
TIME/DIV: 0.1µS



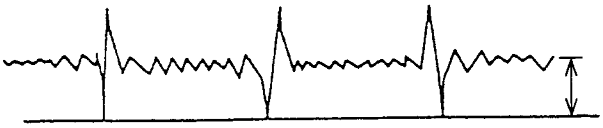
② RF

VOLT/DIV: 500mV
TIME/DIV: 0.5µS



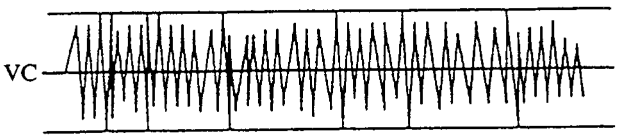
③ FOCUS

VOLT/DIV: 200mV
TIME/DIV: 2mS

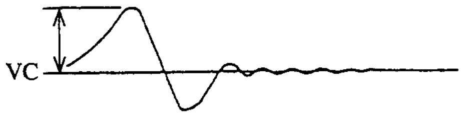


④ TRACKING

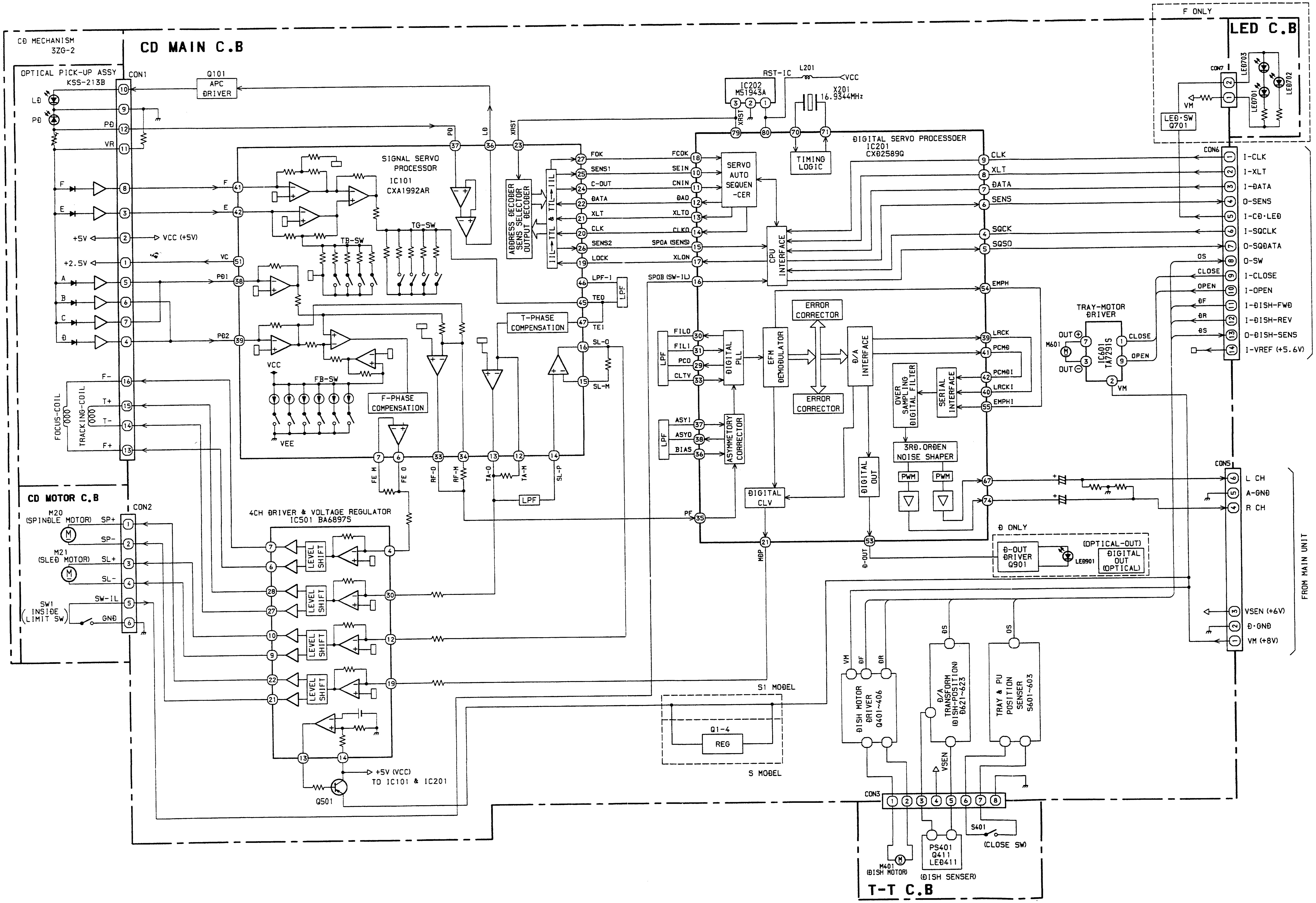
TIME/DIV: 1mS



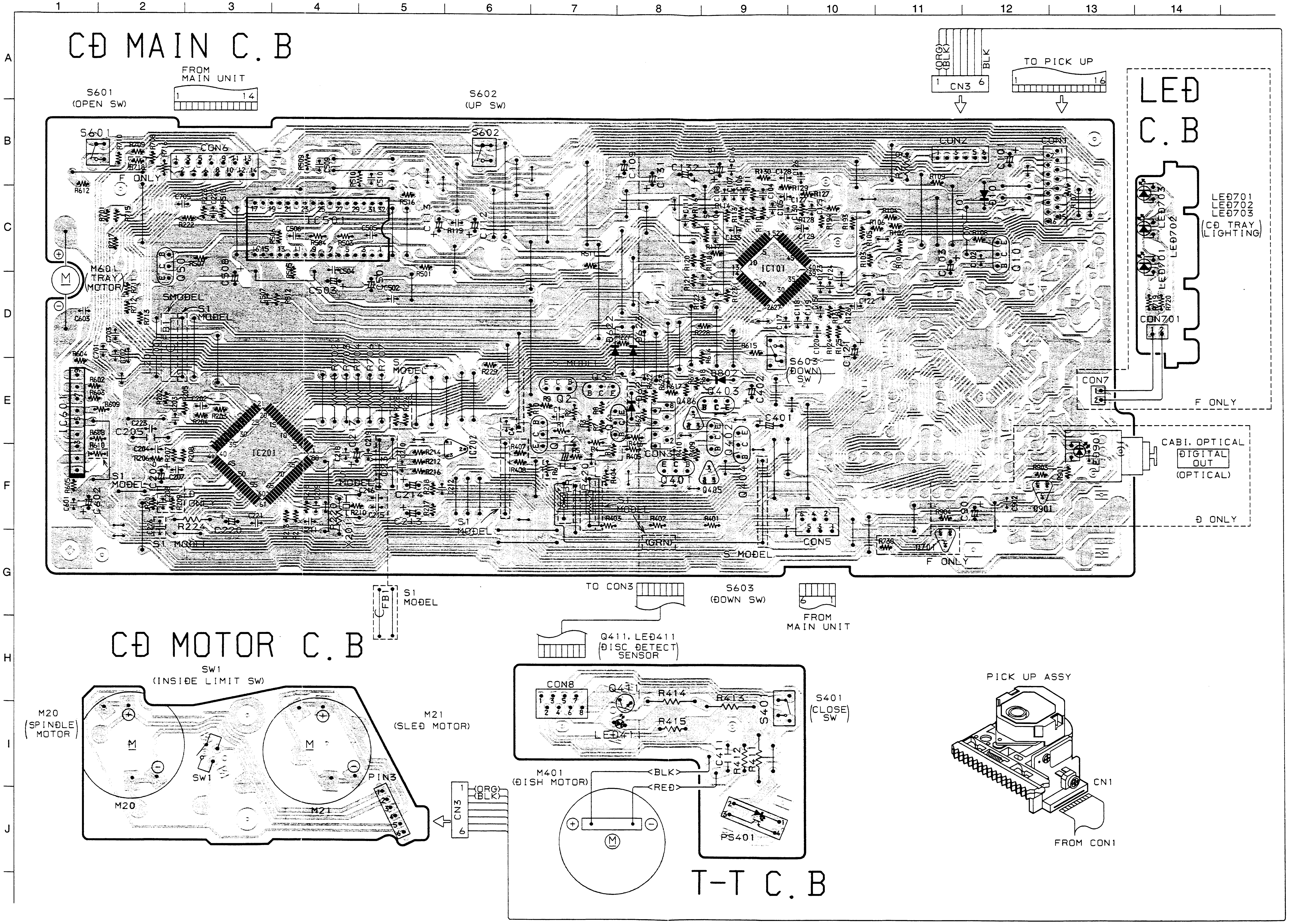
⑤ FOCUS SEARCH

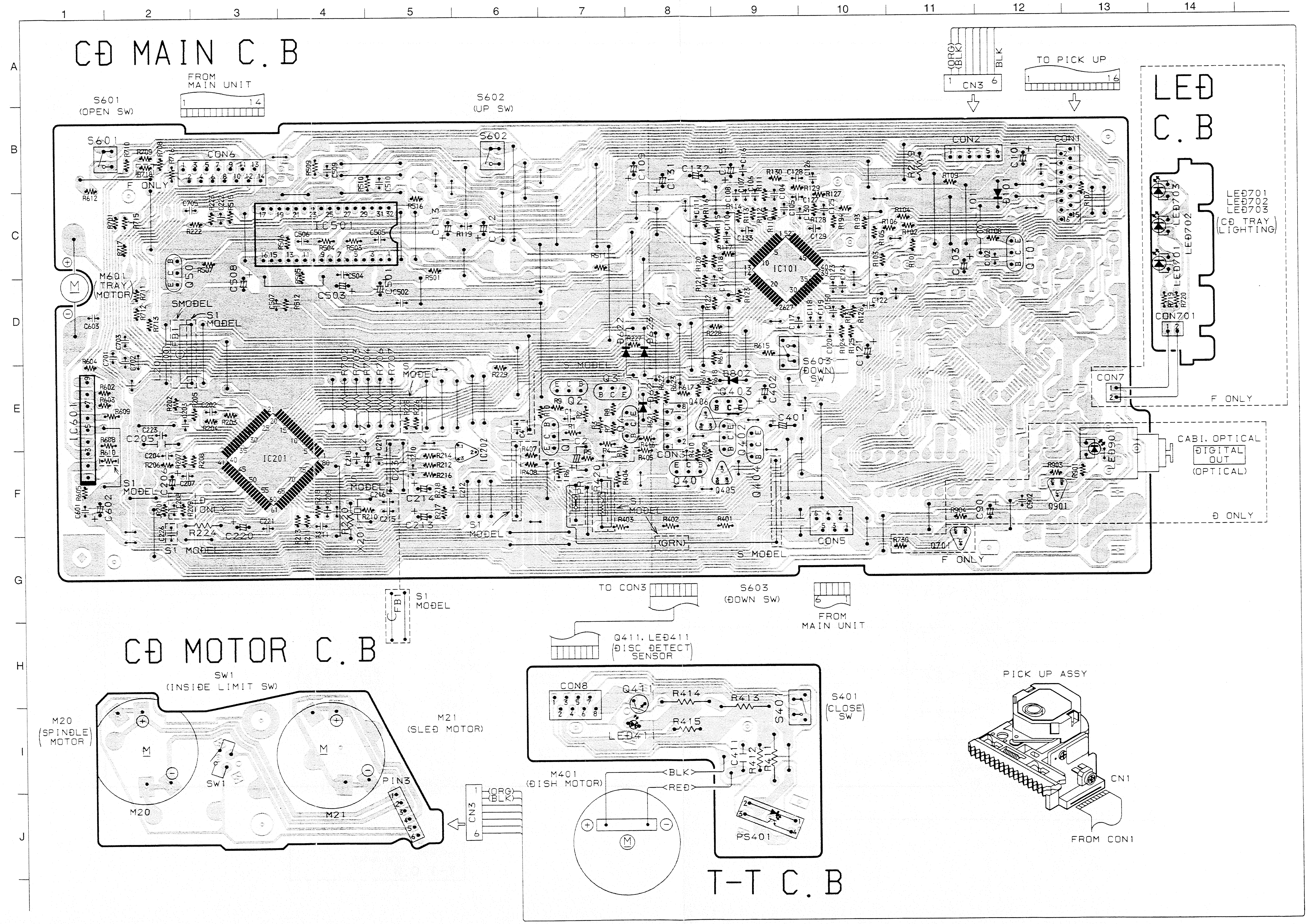


BLOCK DIAGRAM

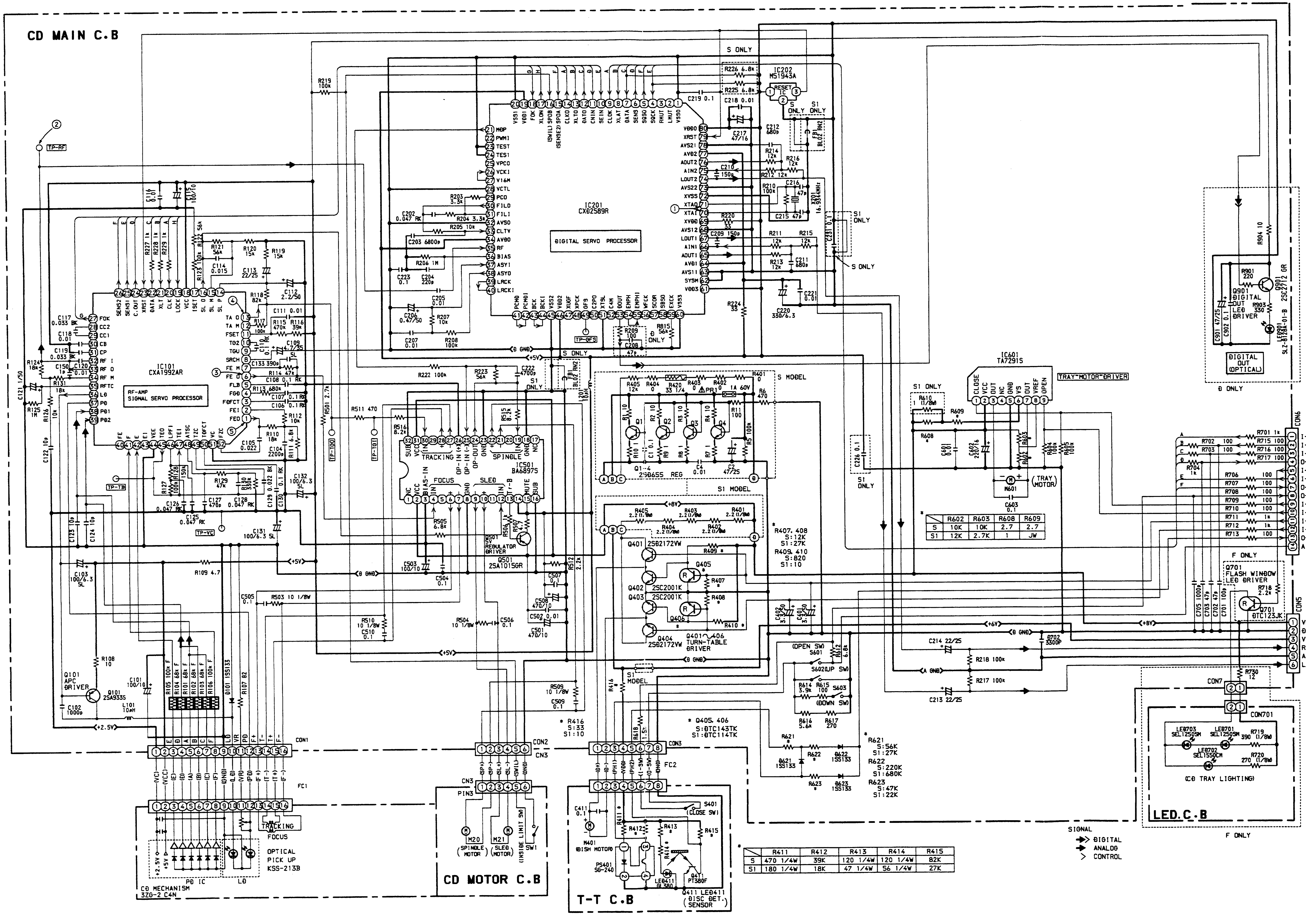

CD MECHANISM
3ZG-2
CD MAIN C.B
OPTICAL PICK-UP ASSY
KSS-213B
CON1
Q101
APC
DRIVER
LD
PD
VR
F
E
+5V
VCC (+5V)
+2.5V
A
B
C
D
F-
T+
T-
F+
FOCUS-COIL
TRACKING-COIL
SIGNAL SERVO
PROCESSOR
IC101
CXA1992AR
TG-SW
TB-SW
FB-SW
VCC
VEE
VC
PD1
PD2
F-PHASE
COMPENSATION
T-PHASE
COMPENSATION
LPF
FE M
FE O
RF-O
RF-M
TA-O
TA-M
SL-P
SL-O
SL-M
TE1
TED
LPF-1
XRST
ADDRESS DECODER
SENS SELECTOR
OUTPUT DECODER
IIL↔TTL & TTL→IIL
FOK
SENS1
C-OUT
DATA
XLT
CLK
SENS2
LOCK
RST-IC
IC202
M51943A
L201
VCC
X201
16.9344MHz
TIMING
LOGIC
DIGITAL SERVO PROCESSOER
IC201
CXD2589Q
FCOK
SEIN
CNIN
DAD
XLTO
CLKO
SPOA (SENS)
XLON
SPOB (SW-IL)
SERVO
AUTO
SEQUEN
-CER
CPU
INTERFACE
CLK
XLT
DATA
SENS
SQCK
SQSO
EMPH
LRCK
PCMD
PCMDI
LRCKI
EMPHI
FILO
FILI
PCO
CLTV
LPF
DIGITAL
PLL
EFM
DEMODULATOR
ERROR
CORRECTOR
D/A
INTERFACE
OVER
SAMPLING
DIGITAL FILTER
SERIAL
INTERFACE
3RD.ORDER
NOISE SHAPER
PWM
ASY1
ASYO
BIAS
ASYMMETORY
CORRECTOR
DIGITAL
CLV
DIGITAL
OUT
PF
MDP
D-OUT
D ONLY
D-OUT
DRIVER
Q901
LED901
(OPTICAL-OUT)
DIGITAL
OUT
(OPTICAL)
F ONLY
LED C.B
CON7
LED-SW
Q701
VM
LED701
LED702
LED703
CON6
I-CLK
I-XLT
I-DATA
O-SENS
I-CD-LED
I-SQCLK
O-SQDATA
O-SW
I-CLOSE
I-OPEN
I-DISH-FWD
I-DISH-REV
O-DISH-SENS
I-VREF (+5.6V)
FROM MAIN UNIT
OS
CLOSE
OPEN
DF
DR
DS
TRAY-MOTOR
DRIVER
M601
OUT⊕
OUT⊖
IC601
TA7291S
CLOSE
OPEN
VM
CON5
L CH
A-GND
R CH
VSEN (+6V)
D-GND
VM (+8V)
FROM MAIN UNIT
CD MOTOR C.B
CON2
M20
(SPINDLE MOTOR)
SP+
SP-
M21
(SLED MOTOR)
SL+
SL-
SW1
INSIDE
LIMIT SW
SW-IL
GND
4CH DRIVER & VOLTAGE REGULATOR
IC501 BA6897S
LEVEL
SHIFT
+5V (VCC)
TO IC101 & IC201
Q501
S1 MODEL
Q1-4
REG
S MODEL
VM
DF
DR
DISH MOTOR
DRIVER
Q401~406
DS
D/A
TRANSFORM
(DISH-POSITION)
D621~623
DS
TRAY & PU
POSITION
SENSER
S601~603
VSEN
CON3
S401
(CLOSE SW)
M401
(DISH MOTOR)
PS401
Q411
LED411
(DISH SENSER)
T-T C.B

WIRING


CD MAIN C.B
FROM MAIN UNIT
S601 (OPEN SW)
S602 (UP SW)
TO PICK UP
CN3
(ORG)
(BLK)
BLK
CON6
CON2
CON1
IC501
IC101
IC201
IC202
IC601
M601 TRAY MOTOR
F ONLY
S MODEL
S1 MODEL
S603 (DOWN SW)
CON3
CON5
CON7
(GRN)
LED C.B
LED701 LED702 LED703
(CD TRAY LIGHTING)
CON701
CABI. OPTICAL
DIGITAL OUT
(OPTICAL)
D ONLY
TO CON3
S603 (DOWN SW)
FROM MAIN UNIT
S1 MODEL
FB1
CD MOTOR C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
M20
M21
SW1
PIN3
CN3
Q411, LED411 (DISC DETECT SENSOR)
CON8
Q411
R414
R413
R415
LED411
S401
S401 (CLOSE SW)
C411
R412
R411
PS401
M401 (DISH MOTOR)
<BLK>
<RED>
T-T C.B
PICK UP ASSY
CN1
FROM CON1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J


CD MAIN C.B
FROM MAIN UNIT
S601 (OPEN SW)
S602 (UP SW)
CN3
TO PICK UP
LED C.B
LED701 LED702 LED703 (CD TRAY LIGHTING)
CON701
CON7
F ONLY
CABI. OPTICAL DIGITAL OUT (OPTICAL)
D ONLY
IC501
IC101
IC201
IC202
IC601
M601 (TRAY MOTOR)
S1 MODEL
S MODEL
CON6
CON2
CON1
CON5
S603 (DOWN SW)
Q401
Q402
Q403
Q404
Q405
Q406
Q901
Q701
LED901
TO CON3
FROM MAIN UNIT
Q411, LED411 (DISC DETECT SENSOR)
CD MOTOR C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
PIN3
M401 (DISH MOTOR)
BLK
RED
CON8
R414
R413
R415
S401 (CLOSE SW)
PS401
T-T C.B
PICK UP ASSY
CN1
FROM CON1

SCHEMATIC DIAGRAM


CD MAIN C.B
IC101
CXA1992AR
RF-AMP SIGNAL SERVO PROCESSOR
IC201
CX02589R
DIGITAL SERVO PROCESSOR
IC202
M51943A
RESET IC
IC501
BA6897S
TRACKING
FOCUS
SLED
SPINDLE
Q501
5V REGULATOR DRIVER
Q501 2SA1015GR
Q101
APC DRIVER
Q101 2SA933S
Q1-4 2SD655 REG
S MODEL
S1 MODEL
Q401 2SB1172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SB1172VW
Q401~406 TURN-TABLE DRIVER
* Q405, 406
S: DTC143TK
S1: DTC114TK
* R407, 408
S: 12K
S1: 27K
R409, 410
S: 820
S1: 10
* R416
S: 33
S1: 10
IC601
TA7291S
TRAY-MOTOR-DRIVER
M601
(TRAY MOTOR)
S1 ONLY
S ONLY
F ONLY
D ONLY
Q701
FLASH WINDOW LED DRIVER
Q701 DTC123JK
Q901
DIGITAL OUT LED DRIVER
Q901 2SC2712 GR
LE0901 SLZ-8128A-01-B
DIGITAL OUT (OPTICAL)
(OPEN SW) S601
S602 (UP SW)
S603 (DOWN SW)
* R621
S: 56K
S1: 27K
R622
S: 220K
S1: 680K
R623
S: 47K
S1: 22K
CON1
CON2
CON3
CN3
CON5
CON6
CON7
CON701
FC1
FC2
I-CLK
I-XLT
I-DATA
O-SENS
I-CD.LED
O-SQCLK
O-SQDATA
O-SW
I-CLOSE
I-OPEN
I-DISH FWD
I-DISH RVS
O-DISH SENS
AVREF
FROM MAIN UNIT
VM (+8V)
D-GND
VSEN (+6V)
R CH
A-GND
L CH
LED0703 SEL1250SM
LED0701 SEL1250SM
LED0702 SEL1550CM
(CD TRAY LIGHTING)
LED.C.B
TRACKING
FOCUS
OPTICAL PICK UP KSS-213B
PD IC
LD
CD MECHANISM 3ZG-2 C4N
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CD MOTOR C.B
S401 (CLOSE SW)
M401 DISH MOTOR
PS401 SG-240
LED411 GL380
Q411 PT380F
Q411 LED411 (DISC DET. SENSOR)
T-T C.B
SIGNAL
DIGITAL
ANALOG
CONTROL

*

	R602	R603	R608	R609
S	10K	10K	2.7	2.7
S1	12K	2.7K	1	JW

*

	R411	R412	R413	R414	R415
S	470 1/4W	39K	120 1/4W	120 1/4W	82K
S1	180 1/4W	18K	47 1/4W	56 1/4W	27K

IC DESCRIPTION

IC, CXA1992AR

端子番号	端子名称	I/O	機能説明
1	FEO	O	フォーカス·エラーアンプの出力端子です。 内部でバイアス調整用のウィンドウコンパレータ入力に接続されています。
2	FEI	I	フォーカス·エラーの入力端子です。
3	FDFCT	I	ディフェクト時の時定数用コンデンサ接続端子です。
4	FGD	I	フォーカス·サーボの高域ゲインを落とす場合、この端子をコンデンサで接地します。
5	FLB	I	フォーカス·サーボの低域持ち上げ用時定数外付け端子です。
6	FE_O	O	フォーカス·ドライブ出力です。
7	FEM	I	フォーカス·アンプの反転入力端子です。
8	SRCH	I	フォーカス·サーチ波形を作るための時定数外付け端子です。
9	TGU	I	トラッキング高域ゲイン切り換え用時定数外付け端子です。
10	TG2	I	トラッキング高域ゲイン切り換え用時定数外付け端子です。
11	FSET	I	フォーカス·トラッキングの位相補償のピーク設定用端子です。
12	TA_M	I	トラッキング·アンプの反転入力端子です。
13	TA_O	O	トラッキングドライブ出力。
14	SL_P	I	スレッド·アンプの非反転入力端子です。
15	SL_M	I	スレッド·アンプの反転入力端子です。
16	SL_O	O	スレッドドライブ出力。
17	ISET	I	フォーカスサーチ、トラックジャンプ、スレッドキックの高さを決める電流を設定します。
18	Vcc	I	＋5V電源供給端子。
19	LOCK	I	“L”でスレッド暴走防止回路が働きます。
20	CLK	I	シリアルデータ転送クロック入力です。
21	XLT	I	ラッチ入力です。
22	DATA	I	シリアルデータ入力です。
23	XRST	I	リセット入力端子“L”でリセットします。
24	C_OUT	O	トラック数カウント用信号出力です。
25	SENS1	O	コマンドにより、FZC、DFCT1、TZC、BALH、TGH、FOH、ATSCなどを出力します。
26	SENS2	O	コマンドにより、DFCT2、MIRR、BALL、TGL、FOLなどを出力します。
27	FOK	O	フォーカスOKコンパレータの出力端子です。
28	CC2	I	DEFECTボトム·ホールド出力が容量結合されて入力される入力端子です。
29	CC1	O	DEFECTボトム·ホールド出力端子です。
30	CB	I	DEFECTボトム·ホールドコンデンサ接続端子です。
31	CP	I	MIRRホールド·コンデンサの接続端子です。かつ、MIRRコンパレータの非反転入力端子です。
32	RF_I	I	RFサミングアンプの出力が容量結合されて入力される入力端子です。
33	RF_O	O	RFサミングアンプの出力端子です。(EYEパターンのチェックポイント)
34	RF_M	I	RFサミングアンプの反転入力端子です。 この端子とRFO端子間に接続された抵抗でRFアンプのゲインが決まります。
35	RFTC	I	RFレベルコントロール時の時定数外付け端子です。
36	LD	O	APCアンプの出力端子です。
37	PD	I	APCアンプの入力端子です。
38、39	PD1、PD2	I	RF I-Vアンプの反転入力端子です。光学ピックアップのA+C、B+D端子に接続して電流入力で受けます。
40	FEBIAS	I/O	フォーカス·エラーアンプのバイアス調整用端子です。自動調整する場合、OPEN。
41、42	F、E	I	F、EのI-Vアンプの反転入力端子です。光学ピックアップのF、Eに接続して電流入力で受けます。
43	EI	—	I-VアンプEのゲイン調整用端子です。
44	VEE	—	GND接続端子。
45	TEO	O	トラッキング·エラーアンプの出力端子です。E-F信号が出力されます。
46	LPFI	I	BAL調整用コンパレータ入力端子です。
47	TEI	I	トラッキング·エラーの入力端子です。
48	ATSC	I	ATSC検出用ウインドウコンパレータ入力端子です。
49	TZC	I	トラッキング·ゼロクロスコンパレータの入力端子です。
50	TDFCT	I	ディフェクト時の時定数用コンデンサ接続端子。
51	VC	O	(VCC＋VEE) /2 の直流電圧出力端子です。
52	FZC	I	フォーカス・ゼロクロスコンパレータの入力端子です。

IC, CXD2589Q

端子番号	端子名称	I/O	機　能　説　明
1、20、45、60	VSS	—	GND。
2	LMUT	O	Lch・“0”検出フラグ。
3	RMUT	O	Rch・“0”検出フラグ。
4	SQCK	I	SQSOリード・アウト用クロック入力。
5	SQSO	O	SubQ 80bitのシリアル出力。
6	SENS	O	SENS出力　CPUへ出力。
7	DATA	I	CPUよりシリアルデータ入力。
8	XLAT	I	CPUよりラッチ入力　立ち下がりでシリアルデータをラッチ。
9	CLOK	I	CPUよりシリアルデータ転送クロック入力。
10	SEIN	I	SSPよりセンス入力。
11	CNIN	I	トラックジャンプ数カウント信号入力。
12	DATO	O	SSPへシリアルデータ出力。
13	XLTO	O	SSPへシリアルデータラッチ出力　立ち下がりでラッチ。
14	CLKO	O	SSPへシリアルデータ転送クロック出力。
15	SPOA	I	マイコン拡張インタフェース。(入力A)
16	SPOB	I	マイコン拡張インタフェース。(入力B)
17	XLON	O	マイコン拡張インタフェース。(出力)
18	FOK	I	フォーカスOK入力端子。SENS出力とサーボ・オートシーケンサに使用。
19、46、61、80	VDD	—	電源。(+5V)
21	MDP	O	スピンドルモータのサーボ制御。
22	PWMI	I	スピンドルモータの外部制御入力。
23	TEST	I	TEST用端子　通常GND。
24	TESI		
25	VPCO	O	広帯域EFM PLL用チャージポンプ出力。
26	VCKI	I	広帯域EFM PLL用VCO2発振入力。
27	V16M	O	広帯域EFM PLL用VCO2発振出力。
28	VCTL	I	広帯域EFM PLL用VCO2コントロール電圧入力。
29	PCO	O	マスタPLL用チャージポンプ出力。
30	FILO	O	マスタPLL用 (スレーブ=デジタルPLL) フィルタ出力。
31	FILI	I	マスタPLL用フィルタ入力。
32	AVSS	—	アナログGND。
33	CLTV	I	マスタ用VCOコントロール電圧入力。
34	AVDD	—	アナログ電源。(+5V)
35	RF	I	EFM信号入力。
36	BIAS	I	アシンメトリー回路定電流入力。
37	ASYI	I	アシンメトリーコンパレート電圧入力。
38	ASYO	O	EFMフルスイング出力。(L=VSS、H=VDD)
39	LRCK	O	D/Aインタフェース　LRクロック出力 f=Fs。
40	LRCKI	I	LRクロック入力。
41	PCMD	O	D/Aインタフェース　シリアルデータ出力。(2's COMP、MSBファースト)
42	PCMDI	I	D/Aインタフェース　シリアルデータ入力。(2's COMP、MSBファースト)

端子番号	端子名称	I/O	機　能　説　明
43	BCK	O	D/Aインタフェース　ビットクロック出力。
44	BCKI	I	D/Aインタフェース　ビットクロック入力。
47	XUGF	O	XUGF出力、コマンドによる切り換えでMNT1、RFCK出力。
48	XPCK	O	XPLCK出力、コマンドによる切り換えでMNT0出力。
49	GFS	O	GFS出力、コマンドによる切り換えでMNT3、XRAOF出力。
50	C2PO	O	C2PO出力、コマンドによる切り換えでGTOP出力。
51	XTSL	I	X'tal選択入力端子　X'talが16.9344MHzの時“L”　33.8688MHzの時“H”。
52	C4M	O	4.2336MHz出力　CAV-Wモード時はVCKIの1/4分周が出力。
53	DOUT	O	Digital Out出力端子。
54	EMPH	O	再生Discがエンファシス有りの時“H”出力　無しの時“L”出力。
55	EMPHI	I	ディエンファシスONの時“H”入力　OFFの時“L”入力。
56	WFCK	O	WFCK出力。
57	SCOR	O	サブコードシンクS0かS1どちらか検出された時“H”出力。
58	SESO	O	SubP～Wのシリアル出力。
59	EXCK	I	SBSOリード・アウト用クロック入力。
62	SYSM	I	ミュート入力端子“H”の時アクティブ。
63	AVSS	—	アナログGND。
64	AVDD	—	アナログ電源。(+5V)
65	AOUT1	O	Lch・アナログ出力端子。
66	AINI	I	Lch・OPAMP入力端子。
67	LOUT1	O	Lch・LINE出力端子。
68	AVSS	—	アナログGND。
69	XVDD	—	マスタクロック用電源。
70	XTAI	I	水晶発振回路入力端子。マスタクロックを外部から入力する場合この端子から入力。
71	XTAO	O	水晶発振回路出力端子。
72	XVSS	—	マスタクロック用GND端子。
73	AVSS	—	アナログGND。
74	LOUT2	O	Rch・LINE出力端子。
75	AIN2	I	Rch・OPAMP入力端子。
76	AOUT2	O	Rch・アナログ出力端子。
77	AVDD	—	アナログ電源。(+5V)
78	AVSS	—	アナログGND。
79	XRST	I	システムリセット　Lでリセット。

注)
- PCMDは、MSBファーストの2'sコンプリメント出力です。
- GTOPは、Frame Syncの保護状況をモニタするものです。(“H”：シンク保護ウインドウ開放)
- XUGFは、EFM信号から得られたFrame Syncで、ネガティブパルスです。シンク保護前の信号。
- XPLCKは、EFM PLLのクロックの反転。立ち下がりエッジとEFM信号の変化点が、合うようにPLLが作られています。
- GFSは、Frame Syncと内挿タイミングが一致した時“H”となる信号です。
- RFCKは、X'tal精度で作られる136μ周期の信号 (通常速時) です。
- C2POは、Dataのエラー状態を表す信号です。
- XRAOFは、16K RAMが、±4Fのジッタマージンを超えた時、発生する信号です。

IC, CXA1992AR

Pin No.	Pin Name	I/O	Description
1	FEO	O	Output terminal for focus error amplifier. Internally connected to window comparator input for bias condition.
2	FEI	I	Input terminal for focus error.
3	FDFCT	I	Capacitor connection terminal for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FE_O	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TA_M	I	Tracking amplifier inverted input pin.
13	TA_O	O	Tracking drive output.
14	SL_P	I	Sled amplifier non-inverted input pin.
15	SL_M	I	Sled amplifier inverted input pin.
16	SL_O	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input with external resistance connected.
18	Vcc	I	Power supply.
19	LOCK	I	"L" setting starts sled disorder-prevention circuit. (Not pull-up resistance)
20	CLK	I	Clock input for serial data transfer from CPU. (No pull-up resistance)
21	XLT	I	Latch input from CPU. (No pull-up resistance)
22	DATA	I	Serial data input from CPU. (No pull-up resistance)
23	XRST	I	Reset system at "L" setting. (No pull-up resistance)
24	C_OUT	O	Signal output for track number counting.
25	SENS1	O	FZC, DFCT1, TZC, BALH, TGH, FOH, or ATSC is output depending on the command from CPU.
26	SENS2	O	DFCT2, MIRR, BALL, TGL or FOL is output depending on the command from CPU.
27	FOK	O	Output terminal for focus OK comparator.
28	CC2	I	Input pin where the DEFECT bottom hold output is capacitance coupled.
29	CC1	O	DEFECT bottom-hold output terminal. Internally connected to interruption comparator input.
30	CB	I	Connection terminal for DEFECT bottom-hold capacitor.
31	CP	I	Connection terminal for MIRR hold-capacitor. Anti-reverse input terminal for MIRR comparator.
32	RF_I	I	Input terminal by capacity combination of RF summing amplifier.
33	RF_O	O	Output terminal of RF summing amplifier. Checkpoint of Eye pattern.
34	RF_M	I	Anti-reverse input terminal for RF summing amplifier. The gain of RF amplifier is decided by the connection resistance between RF_M and RFO terminals.
35	RFTC	I	This is a pin where the selection time constant is externally connected to control the RF level.
36	LD	O	APC amplifier output terminal.
37	PD	I	APC amplifier input terminal.
38, 39	PD1, PD2	I	RFI-V amplifier inverted input pin. These pins are connected to the A+C and B+C pins of the optical pickup, receiving by currents input.
40	FEBIAS	I/O	Bias adjustment pin of the focus error amplifier.
41, 42	F, E	I	F and EIV amplifier inverted input pins. These pins are connected to the F and E of the optical pickup, receiving by current input.
43	EI	—	Gain adjustment pin of the I-V amplifier E. (When not in use of BAL automatic adjustment)
44	VEE	—	GND connection pin.
45	TEO	O	Output terminal for tacking-error amplifier. Output E-F signal.
46	LPFI	I	BAL adjustment comparator input pin. (Input through LPF from TEO)
47	TEI	I	Input terminal for tracking error.
48	ATSC	I	Window-comparator input terminal for detecting ATSC.
49	TZC	I	Input terminal for tracking-zero cross comparator.
50	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
51	VC	O	Output terminal for DC voltage reduced to half of VCC+VEE.
52	FZC	I	Input terminal for focus-zero cross comparator.

IC, CXD2589Q

Pin No.	Pin Name	I/O	Description
1, 20, 45, 60	VSS	—	GND.
2	LMUT	O	Lch-“0” detect flag.
3	RMUT	O	Rch-“0” detect flag.
4	SQCK	I	Clock input for SQSO read out.
5	SQSO	O	SubQ 80 bit serial output.
6	SENS	O	SENS signal output to CPU.
7	DATA	I	Serial data input from CPU.
8	XLAT	I	Latch input from CPU, Latch serial data at fall down.
9	CLOK	I	Clock input to serial data transfer from CPU.
10	SEIN	I	SENS input from SSP.
11	CNIN	I	Numbers of track jump are counted and input.
12	DATO	O	Serial data output to SSP.
13	XLTO	O	Serial-data latch output to SSP. Latch at fall down.
14	CLKO	O	Clock output for serial data transfer to SSP.
15	SPOA	I	Microcomputer expansion interface. (Input A)
16	SPOB	I	Microcomputer expansion interface. (Input B)
17	XLON	O	Microcomputer expansion interface. (Output)
18	FOK	I	Focus OK input terminal. Used for SENS output and servo-auto sequencer.
19, 46, 61, 80	VDD	—	Power supply. (+5V)
21	MDP	O	Servo control for spindle motor.
22	PWMI	I	External control input for spindle motor.
23	TEST	I	TEST terminal. (Connected to GND)
24	TESI	I	TEST terminal. (Connected to GND)
25	VPCO	O	Charge pump output for extensive EFM PLL.
26	VCKI	I	VCO2 oscillator input for extensive EFM PLL.
27	V16M	O	VCO2 oscillator output for extensive EFM PLL.
28	VCTL	I	VCO2 control voltage input for extensive EFM PLL.
29	PCO	O	Charge pump output for master PLL.
30	FILO	O	Filter (slave = digital PLL) output for master PLL.
31	FILI	I	Filter input for master PLL.
32	AVSS	—	Analog GND.
33	CLTV	I	VCO control voltage input for master.
34	AVDD	—	Analog power. (+5V)
35	RF	I	EFM signal input.
36	BIAS	I	Constant current input to asymmetry circuit.
37	ASYI	I	Comparison voltage input to asymmetry circuit.
38	ASYO	O	EFM full-swing output. (L=VSS, H=VDD)
39	LRCK	O	D/A interface, LR clock output f=FS.
40	LRCKI	I	LR clock input.
41	PCMD	O	D/A interface, serial data output. (2’s COMP, MSB first)
42	PCMDI	I	D/A interface, serial data input. (2’s COMP, MSB first)
43	BCK	O	D/A interface bit clock output.
44	BCKI	I	D/A interface bit clock input.
47	XUGF	O	XUGF output, MNT1 or RPCK output by switching command.
48	XPCK	O	XPLCK output, MNT0 output by switching command.
49	GFS	O	GFS output, MNT3 or XRAOF output by switching command.
50	C2PO	O	C2PO output, GTOP output by switching command.
51	XTSL	I	X’tal select input terminal, X’tal: 16.9344MHz = “L” 33.8688MHz = “H”.
52	C4M	O	4.2336MHz output, Output 1/4 divided frequency of VCKI at CAV-W mode.
53	DOUT	O	Digital Out connector output signal.
54	EMPH	O	“H” when the playback disc has emphasis. “L” when it does not.
55	EMPHI	I	De-emphasis ON/OFF, “H” when ON, “L” when OFF.
56	WFCK	O	WFCK output.
57	SCOR	O	H output when the subcode sync S0 or S1 is detected.
58	SESO	O	Serial output for SubP-W.
59	EXCK	I	SBSO read out clock input.
62	SYSM	I	Mute input terminal, Active the “H” setting.
63	AVSS	—	Analogue GND.
64	AVDD	—	Analogue power supply. (+5V)
65	AOUT1	O	Lch/analogue output terminal.
66	AINI	I	Lch/OP AMP input terminal.
67	LOUT1	O	Lch/LINE output terminal.
68	AVSS	—	Analogue GND.
69	XVDD	—	Power supply for master clock.
70	XTAI	I	Input terminal for crystal oscillator circuit. Input external master clock from this terminal.
71	XTAO	O	Output terminal for crystal oscillator circuit.
72	XVSS	—	GND terminal for master clock.
73	AVSS	—	Analogue GND.
74	LOUT2	O	Rch/LINE output terminal.
75	AIN2	I	Rch/OP AMP input terminal.
76	AOUT2	O	Rch/analogue output terminal.
77	AVDD	—	Analogue power supply. (+5V)
78	AVSS	—	Analogue GND.
79	XRST	I	Reset system at “L” setting.

Note)

- PCMD is the two’s complement output with MSB first.
- GTOP monitors the protection status of the Frame Sync. (H: Sync protection window opened).
- XUGF is the Frame Sync negative pulse which is obtained from the EFM signal. This is the signal before the sync protection.
- XPLCK is the inverted signal of the EFM PLL clock. The PLL works so that the fall-down edge and the changed point of the EFM signal agree.
- GFS is the signal that goes “H” when the Frame Sync and the internally inserted timing agree.
- RFCK is the signal having 136 micro-seconds (during normal speed) that is generated to have the same accuracy as X’tal.
- C2PO is the signal indicating the error status of the data.
- XRAOF is the signal that is generated when the 16k RAM goes outside the jitter margin ±4F.

CD TEST MODE

＜テストモードにするには＞

PROGRAMキーを押しながら、ACコードをコンセントに差します。

＜テストモードにはいると＞

システムが初期化され、パワーオンします。
テストモード中は、CDブロックの電源は、常にオンしています。
まず始めに [スレッドモード] になります。

＜テストモードの種類＞

[スレッドモード]

FL表示が全点灯します。「《」「》」キーでピックアップを移動できます。

「□」キーを押すと、[フォーカスモード] になります。
「▷」キーを押すと、[プレイモード] になります。

「《」キーを押すと、スレッドが外周方向に動作します。
「》」キーを押すと、スレッドが内周方向に動作します。
OPEN/CLOSEキーを押すと、トレイの開閉ができます。

[フォーカスモード]

FL表示の全点灯が解除され、通常表示に戻ります。ディスクの有無、フォーカスOK/NGに関係なく、フォーカスサーチを行います。(サーチの回数は無制限、オートシーケンスは使用しません。)
フォーカスが合ってもフォーカスサーボはオンしません。「▷」キーを押すと、[プレイモード] になります。

「《」キーを押すと、トラックナンバーを
　　−1します。
「》」キーを押すと、トラックナンバーを
　　+1します。
OPEN/CLOSEキーを押すと、トレイの開閉ができます。
[スレッドモード] になります。

[プレイモード]

FL表示の全点灯が解除され、通常表示に戻ります。
フォーカスサーチ (サーチの回数は無制限) を行い、フォーカスが合うと、フォーカスサーボをオンとなり、通常の演奏モードになります。[プレイモード] 中は、GFSと音飛びは監視しません。
フォーカスが落ちたら、再度フォーカスを合わせます。
「▷」キーでトラッキングとスレッドのサーボをオン／オフできます。

「□」キーを押すと、[スレッドモード] になります。
「▷」キーを押すと、[‖] 表示を点灯／消灯を切り換えます。

[‖] 消灯中は、
CLV-A　トラッキングサーボ　ON
　　　　スレッドサーボ　　　ON

[‖] 点灯中は、
CLV-A　トラッキングサーボ　OFF
　　　　スレッドサーボ　　　OFF
「《」キーを押すと、トラックナンバーを
　　−1します。
「》」キーを押すと、トラックナンバーを
　　+1します。
OPEN/CLOSEキーを押すと、トレイの開閉ができます。[スレッドモード] になります。

＜テストモードを解除するには＞

ACコードを抜く。または、システムをパワーオフする。

下記は全てTEST-MODEのPLAY-MODEの時にのみ実行する。PLAY中にPRGM釦を押すとFocus-BIASの調整値を表示する。その後

- Focus-BIAS

  DISC PLAY中RANDOM-KEYを押すとFocus-BIAS設定値を表示する。
  ⏮KEYを一回押す度に1STEP DOWNする。
  ⏭KEYを一回押す度に1STEP UPする。
  設定後PLAY-KEYを押す事により確定し、設定した状態でPLAYする。また、STOP-KEYを押す事により設定値は解除する。

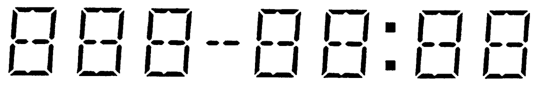
- TRACKING-BALANCE

  DISC PLAY中REPEAT-KEYを押すとT-BALANCE設定値を表示する。設定値の変更、確定、解除はFocus-BIASと同様とする。

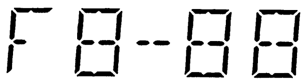
- TRACKING-GAIN

  DISC PLAY中DISPLAY-KEYを押すとT-GAIN設定値を表示する。設定値の変更、確定、解除はFocus-BIASと同様とする。

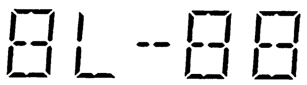
表示方法



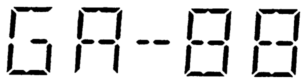
- Focus-BIAS



- TRACKING-BALANCE



- TRACKING-GAIN



< How to Enter the Test Mode >

While pressing the PROGRAM key, insert the AC power cord to AC wall outlet.

< When the Machine Has Entered the Test Mode >

The system is initialized and the main power is turned on. During the test mode, the main power of the CD block is turned on always. The test mode starts with the [Sled mode].

< Types of Test Mode >

[Sled mode]

All displays of the FL tubes light. The optical pickup can be moved by pressing [《] or [》] key.

Pressing the [□] key establishes the [Focus mode].
Pressing the [▷] key establishes the [Play mode].

Pressing the [《] key moves the sled to outer circumference.
Pressing the [》] key moves the sled to inner circumference.
Pressing OPEN/CLOSE key opens or closes the tray.

[Focus mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search is performed in the focus mode regardless whether disc is inserted or not, or focus OK or NG. (Numbers of times of focus search is unlimited. Auto sequence is not used.)
Focus servo is not locked in even the focus is obtained.

Pressing the [▷] key establishes the [Play mode].
Pressing the [《] key decreases the track number to -1.
Pressing the [》] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

[Play mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search (numbers of search is unlimited) is performed. When focus comes to in-focus, the focus servo is locked in and the machines enters the normal play mode.
During [Play mode], GFS and sound skipping are not monitored.
When focus becomes out-of-focus, another attempt is made to search for focus.
The tracking servo and the sled servo can be turned on and off by pressing the [▷] key.

Pressing the [□] key establishes the [Sled mode].
The [‖] display can be turned on and off by pressing the [▷] key .

While the [‖] display is turned off:
CLV-A　Tracking servo: on
　　　　Sled servo: on
While the [‖] display is turned on:
CLV-A　Tracking servo: off
　　　　Sled servo: off

Pressing the [《] key decreases the track number to -1.
Pressing the [》] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

< How to Exit the Test Mode >

Remove the AC power cord from power outlet, or turn off the system power.

The focus bias, tracking balance and the tracking gain adjustment values can be displayed, modified, set and released in the Play mode only of the following Test mode.
When the PRGM button is pressed during Play, the adjustment value of the focus bias is displayed. After that, you can enter the followings:

- FOCUS - BIAS

  [Display]: Pressing the RANDOM key during disc play, the focus bias setting value is displayed.
  [Adjustment]: Every pressing of the ⏮ key decrements the adjustment value by 1 step.
  Every pressing of the ⏭ key increments the adjustment value by 1 step.
  [Set]: The adjustment value is set by pressing the PLAY key after adjustment. Playback a disc after setting.
  [Release]: The set value can be released by pressing the STOP key.

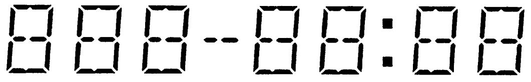
- TRACKING - BALANCE

  [Display]: Pressing the REPEAT key during disc play, the tracking balance setting value is displayed.
  [Adjustment]: The same procedure as in the FOCUS - BIAS.
  [Set]: The same procedure as in the FOCUS - BIAS.
  [Release]: The same procedure as in the FOCUS - BIAS.

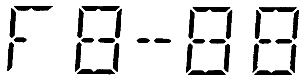
- TRACKING - GAIN

  [Display]: Pressing the DISPLAY key during disc play, the tracking balance setting value is displayed.
  [Adjustment]: The same procedure as in the FOCUS - BIAS.
  [Set]: The same procedure as in the FOCUS - BIAS.
  [Release]: The same procedure as in the FOCUS - BIAS.

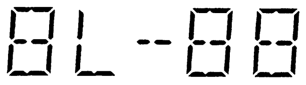
Display method



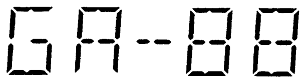
- FOCUS - BIAS



- TRACKING - BALANCE



- TRACKING - GAIN



MODEL NO. 6ZG-1VZ (D, F)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010	1E	C-IC,LA9241ML
	87-A20-019-010	2P	C-IC,LC78630E
	87-017-825-010	1E	IC,GP1F32T<D>
	87-001-982-010	1C	IC,TA7291S
	87-A20-405-040	1E	C-IC,LA6541
	86-ZG1-630-010	2A	C-IC,LC865632A-5E67
	87-001-792-080	1B	IC,NJM2100M
	87-A20-406-010	2F	C-IC,LC74201NE
	87-A20-549-010	2A	C-IC,LC78011E
	87-A20-583-040	2M	C-IC,HM514260CJ/CLJ-6
	87-A20-557-040	2A	C-IC,LC321667CT-25P
	87-A20-602-040	1B	C-IC,M5291FP
	87-A20-601-010	1C	IC,PQ20RVIE
TRANSISTOR			
	89-110-373-080	0E	CHIP-TR,2SA1037 S
	87-026-223-080	0E	TR,DTC143TK
	89-320-011-080	0E	TR,2SC2001 (15W)
	89-421-722-380	0E	TR,2SD2172V/W
	87-026-608-080	0E	C-TR,DTC 123 JK<F>
	89-327-125-080	0E	CHIP TR,2SC2712GR
	87-026-470-080	1A	TR,HN1C03F (0.3W)
	87-026-580-080	0E	C-TR,DTA123JK
	87-026-467-080	0E	TR,HN1C01F (0.3W)
	87-026-473-080	0E	C-TR HN1A01F GR
	87-026-237-080	0E	CHIP-TR,DTC124XK
	89-213-292-080	0E	TR,2SB1329
	87-A30-117-010	1A	TR,2SA1357
DIODE			
	87-020-027-080	0E	CHIP-DIODE 1SS184
	87-A40-180-040	0E	C-DIODE,SB07-015C
MAIN VCD C.B			
C101	87-016-369-080	0E	C-CAP,S 0.033-25 B K
C102	87-A10-201-080	0E	C-CAP,S0.33-16 KB
C103	87-016-460-080	0E	C-CAP,S 0.22-16 B
C104	87-010-213-080	0E	C-CAP,S 0.015-50 B
C105	87-012-157-080	0E	C-CAP,S 330P-50 CH
C106	87-016-369-080	0E	C-CAP,S 0.033-25 B K
C107	87-010-181-080	0E	CAP,CHIP S 1800P
C109	87-010-198-080	0E	CAP, CHIP 0.022
C110	87-010-178-080	0E	CHIP CAP 1000P
C111	87-016-460-080	0E	C-CAP,S 0.22-16 B
C112	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C113	87-016-083-080	0E	C-CAP,S 0.15-16 RK
C114	87-010-197-080	0E	CAP, CHIP 0.01 DM
C115	87-010-186-080	0E	CAP,CHIP 4700P
C116	87-010-322-080	0E	C-CAP,S 100P-50 CH
C117	87-010-184-080	0E	CHIP CAPACITOR 3300P(K)
C118	87-016-526-080	0E	C-CAP,S 0.47-16 BK
C119	87-010-403-040	0E	CAP,E 3.3-50 SME
C120	87-010-379-040	0E	CAP,E 22-16 M SME
C122	87-010-186-080	0E	CAP,CHIP 4700P
C123	87-010-150-080	0E	C-CAP,S 6P-50 CH
C124	87-010-320-080	0E	CHIP CAP 68P
C126	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C128	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C129	87-010-421-040	0E	CAP,E 4.7-50 5L
C130	87-010-550-040	0E	CAP,E 100-6.3 GAS
C132	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C133	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C134	87-010-549-040	0E	CAP,E 47-6.3 GAS
C135	87-010-498-040	0E	CAP,E 10-16 GAS
C137	87-A10-201-080	0E	C-CAP,S0.33-16 KB
C138	87-016-369-080	0E	C-CAP,S 0.033-25 B K
C139	87-010-805-080	0E	CAP, S 1-16
C140	87-010-178-080	0E	CHIP CAP 1000P
C141	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C142	87-010-374-040	0E	CAP,E 47-10
C143	87-010-549-040	0E	CAP,E 47-6.3 GAS
C144	87-010-498-040	0E	CAP,E 10-16 GAS
C145	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C147	87-016-369-080	0E	C-CAP,S 0.033-25 B K
C148	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C151	87-010-992-080	0E	C-CAP,S 0.047-25 B
C152	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C153	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C154	87-012-154-080	0E	C-CAP,S 150P-50 CH
C155	87-010-374-040	0E	CAP,E 47-10
C156	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C157	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C158	87-010-374-040	0E	CAP,E 47-10
C159	87-010-312-080	0E	C-CAP,S 15P-50 CH
C160	87-010-312-080	0E	C-CAP,S 15P-50 CH
C161	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C162	87-016-669-080	0E	C-CAP,S 0.1-25 K B
C163	87-010-149-080	0E	C-CAP,S 5P-50 CH
C164	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C181	87-016-669-080	0E	C-CAP,S 0.1-25 K B<D>
C182	87-010-374-040	0E	CAP,E 47-10<D>
C223	87-010-386-080	0E	CAP,E330-25 SME
C224	87-010-197-080	0E	CAP, CHIP 0.01 DM
C225	87-010-197-080	0E	CAP, CHIP 0.01 DM
C226	87-010-178-080	0E	CHIP CAP 1000P
C227	87-010-197-080	0E	CAP, CHIP 0.01 DM
C251	87-010-248-040	0E	CAP,E 220-10 SME
C252	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C253	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C255	87-010-403-040	0E	CAP,E 3.3-50 SME
C256	87-010-403-040	0E	CAP,E 3.3-50 SME
C302	87-010-322-080	0E	C-CAP,S 100P-50 CH
C303	87-010-322-080	0E	C-CAP,S 100P-50 CH
C304	87-010-322-080	0E	C-CAP,S 100P-50 CH
C305	87-010-322-080	0E	C-CAP,S 100P-50 CH
C306	87-010-178-080	0E	CHIP CAP 1000P
C307	87-010-374-040	0E	CAP,E 47-10
C308	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C401	87-010-805-080	0E	CAP, S 1-16
C402	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C403	87-010-549-040	0E	CAP,E 47-6.3 GAS
C404	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C405	87-010-318-080	0E	C-CAP,S 47P-50 CH
C406	87-010-318-080	0E	C-CAP,S 47P-50 CH
C407	87-010-321-080	0E	CHIP CAPACITOR,82P(J)
C408	87-010-321-080	0E	CHIP CAPACITOR,82P(J)
C409	87-010-320-080	0E	CHIP CAP 68P
C410	87-010-320-080	0E	CHIP CAP 68P
C411	87-010-320-080	0E	CHIP CAP 68P
C412	87-010-320-080	0E	CHIP CAP 68P
C413	87-010-321-080	0E	CHIP CAPACITOR,82P(J)
C414	87-010-321-080	0E	CHIP CAPACITOR,82P(J)
C415	87-010-404-040	0E	CAP,E 4.7-50 SME
C416	87-010-404-040	0E	CAP,E 4.7-50 SME
C417	87-010-186-080	0E	CAP,CHIP 4700P
C418	87-010-186-080	0E	CAP,CHIP 4700P
C419	87-010-263-040	0E	CAP,E 100-10
C420	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C421	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C501	87-010-197-080	0E	CAP, CHIP 0.01 DM
C502	87-A10-484-080	0E	C-CAP,S 1.0U-10 K B
C503	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C504	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C508	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C509	87-010-314-080	0E	C-CAP,S 22P-50V

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C510	87-010-314-080	0E	C-CAP,S 22P-50V
C511	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C513	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C514	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C515	87-010-314-080	0E	C-CAP,S 22P-50V
C516	87-010-314-080	0E	C-CAP,S 22P-50V
C527	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C531	87-010-197-080	0E	CAP, CHIP 0.01 DM
C532	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C534	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C535	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C537	87-010-371-040	0E	CAP,E 470-6.3
C538	87-010-374-040	0E	CAP,E 47-10
C539	87-010-378-040	0E	CAP,E 10-16
C541	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C542	87-010-374-040	0E	CAP,E 47-10
C543	87-010-374-040	0E	CAP,E 47-10
C545	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C546	87-010-549-040	0E	CAP,E 47-6.3 GAS
C547	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C548	87-010-322-080	0E	C-CAP,S 100P-50 CH
C549	87-010-148-080	0E	CAP, CHIP S 4P-50 CH
C551	87-010-314-080	0E	C-CAP,S 22P-50V
C553	87-012-153-080	0E	C-CAP,S 120P-50 CH
C554	87-010-154-080	0E	CAP CHIP 10P
C555	87-010-197-080	0E	CAP, CHIP 0.01 DM
C556	87-010-318-080	0E	C-CAP,S 47P-50 CH
C557	87-010-318-080	0E	C-CAP,S 47P-50 CH
C558	87-010-197-080	0E	CAP, CHIP 0.01 DM
C601	87-010-263-040	0E	CAP,E 100-10
C602	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C603	87-010-384-040	0E	CAP,E 100-25 SME
C604	87-012-140-080	0E	CAP 470P
C605	87-010-178-080	0E	CHIP CAP 1000P
C606	87-010-178-080	0E	CHIP CAP 1000P
C607	87-010-248-040	0E	CAP,E 220-10 SME
C608	87-010-196-080	0E	CHIP CAPACITOR,0.1-25
C609	87-010-263-040	0E	CAP,E 100-10
C610	87-010-374-040	0E	CAP,E 47-10
C611	87-010-384-040	0E	CAP,E 100-25 SME
C615	87-010-197-080	0E	CAP, CHIP 0.01 DM
C618	87-010-805-080	0E	CAP, S 1-16
CN3	86-ZG1-609-010	1D	CONN ASSY,6P
FC1	86-ZG1-605-010	1A	CABLE,FFC 16P
FC2	86-ZG1-608-010	1B	CABLE,FFC 8P
J501	87-009-502-010	1A	JACK,PIN 1P Y EARTH
L101	87-005-196-080	0E	COIL,10UH
L102	87-005-196-080	0E	COIL,10UH
L501	87-005-196-080	0E	COIL,10UH
L502	87-005-196-080	0E	COIL,10UH
L503	87-005-196-080	0E	COIL,10UH
L504	87-005-196-080	0E	COIL,10UH
L511	87-005-207-080	0E	COIL,82UH
L601	87-005-469-080	0E	COIL 4.7UH FLR50
L602	87-A50-095-010	1A	COIL,68UH RCR875D
M601	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
R171	87-022-368-080	--	C-RES,S 180K-1/10W F
R172	87-022-366-080	0E	C-RES,S 120K-1/10WF
R173	87-022-366-080	0E	C-RES,S 120K-1/10WF
R174	87-022-366-080	0E	C-RES,S 120K-1/10WF
R175	87-022-366-080	0E	C-RES,S 120K-1/10WF
R176	87-022-368-080	--	C-RES,S 180K-1/10W F
R605	87-022-343-080	0E	C-RES,S 820-1/10W F
R606	87-022-355-080	0E	C-RES,S10K-1/10W F
R607	87-022-339-080	0E	C-RES,S,390-1/10W F
S301	87-036-109-010	1A	PUSH SWITCH
S302	87-036-109-010	1A	PUSH SWITCH
S303	87-036-109-010	1A	PUSH SWITCH
X151	87-030-270-080	1C	VIB,XTAL 16.9344MHZ
X301	87-030-422-080	1A	VIB,CER CST 6.00MGW
X501	80-JUC-601-080	1E	VIB,XTAL 14.31MHZ
X502	80-JUC-602-080	1E	VIB,XTAL 17.73MHZ

LED C.B<F>

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED801	87-017-733-080	0E	LED,SEL1250SM<F>
LED802	87-017-733-080	0E	LED,SEL1250SM<F>
LED803	87-017-350-080	0E	LED,SEL1550CM<F>

T-T C.B

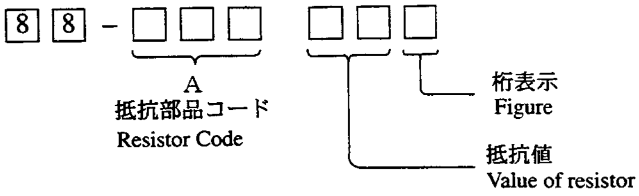
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-080	0E	CAP TC U 0.1-50F
LED411	87-070-288-010	0E	LED,GL380
M401	87-A90-036-010	1D	MOT ASSY,RF-300CA-11
PS401	87-A90-156-010	1B	SNSR,SG-240
Q411	87-A30-031-010	1A	P-TR,PT380F
S401	87-036-109-010	1A	PUSH SWITCH

VIDEO SW C.B

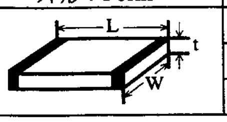
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
S851	87-A90-238-010	1A	SW,SL 1-1-3 9L

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

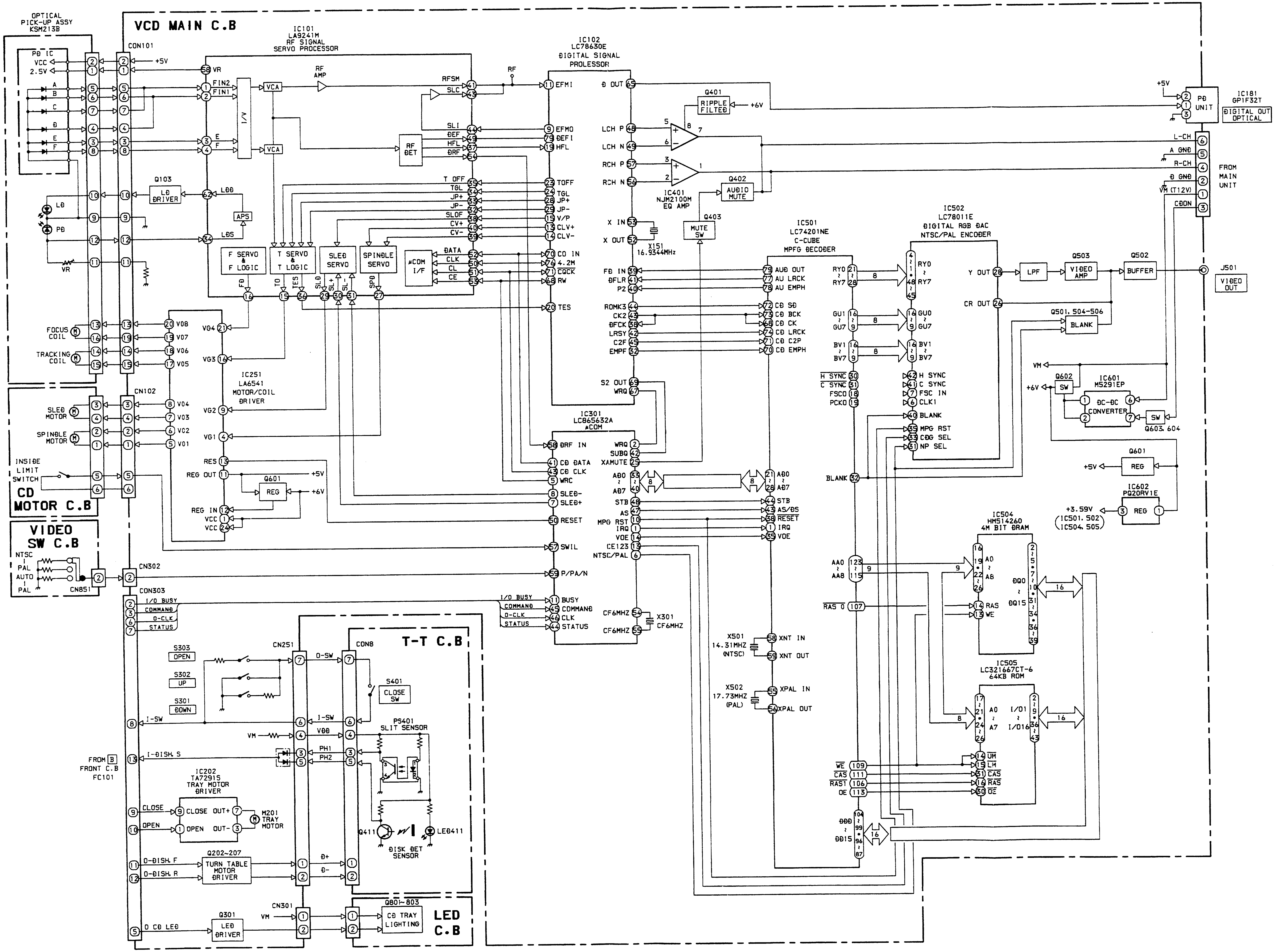
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

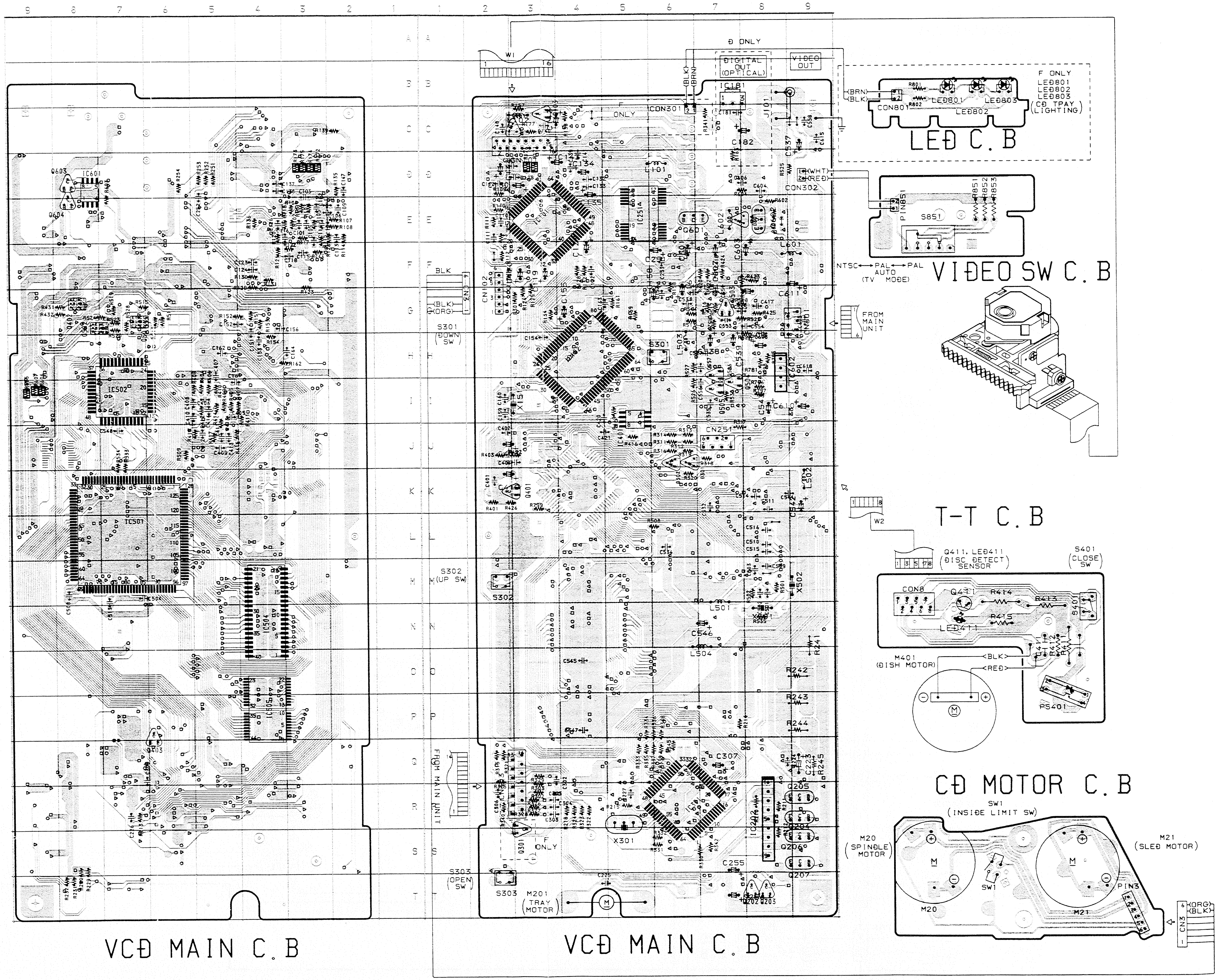


チップ抵抗
Chip resistor

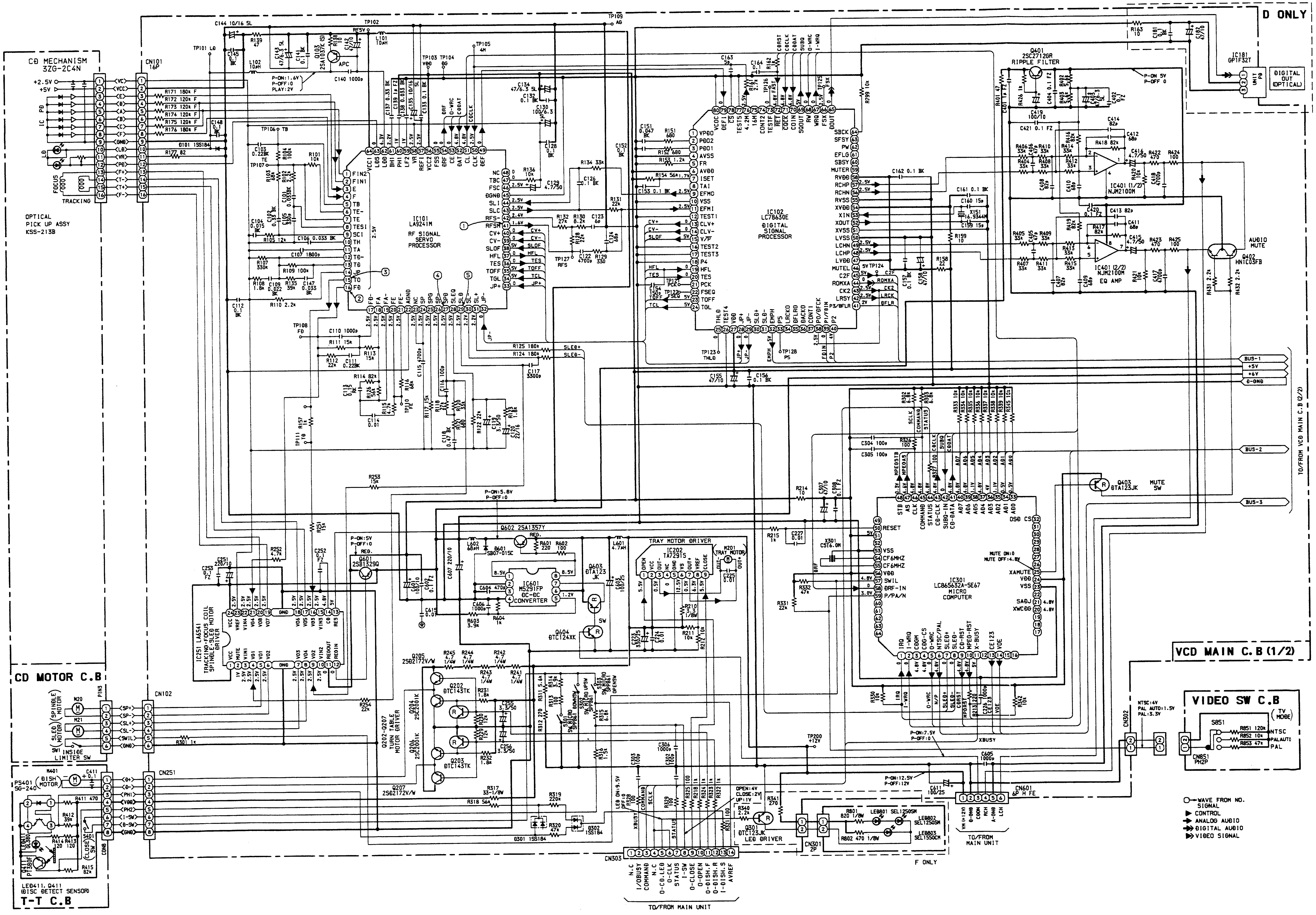
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

BLOCK DIAGRAM


OPTICAL PICK-UP ASSY KSM213B
PD IC
VCC
2.5V
A
B
C
D
E
F
LD
PD
VR
FOCUS COIL
TRACKING COIL
VCD MAIN C.B
CON101
+5V
IC101 LA9241M RF SIGNAL SERVO PROCESSOR
VR
FIN2
FIN1
E
F
I/V
VCA
RF AMP
RFSM
SLC
SLI
DEF
HFL
DRF
RF DET
T OFF
TGL
JP+
JP-
SLOF
CV+
CV-
DATA
CLK
CL
CE
μCOM I/F
F SERVO & F LOGIC
T SERVO & T LOGIC
SLED SERVO
SPINDLE SERVO
FD
TD
TES
SLO
SL+
SL-
SPD
Q103 LD DRIVER
LDD
LDS
APS
IC102 LC78630E DIGITAL SIGNAL PROCESSOR
RF
EFMI
EFMO
DEFI
HFL
TOFF
TGL
JP+
JP-
V/P
CLV+
CLV-
CO IN
4.2M
CQCK
RW
TES
D OUT
LCH P
LCH N
RCH P
RCH N
X IN
X OUT
X151 16.9344MHz
FD IN
DFLR
P2
ROMK3
CK2
DFCK
LRSY
C2F
EMPF
S2 OUT
WRQ
Q401 RIPPLE FILTER
+6V
IC401 NJM2100M EQ AMP
Q402 AUDIO MUTE
Q403 MUTE SW
IC251 LA6541 MOTOR/COIL DRIVER
VG4
VG3
VG2
VG1
VO8
VO7
VO6
VO5
VO4
VO3
VO2
VO1
RES
REG OUT
REG IN
VCC
Q601 REG
+5V
+6V
CN102
SLED MOTOR
SPINDLE MOTOR
INSIDE LIMIT SWITCH
CD MOTOR C.B
VIDEO SW C.B
NTSC
PAL
AUTO
CN851
CN302
CON303
I/O BUSY
COMMAND
O-CLK
STATUS
IC301 LC865632A μCOM
DRF IN
CD DATA
CD CLK
WRC
SLED-
SLED+
RESET
SWIL
P/PA/N
BUSY
COMMAND
CLK
STATUS
WRQ
SUBQ
XAMUTE
AB0
AB7
STB
AS
MPG RST
IRQ
VOE
CE123
NTSC/PAL
CF6MHZ
X301 CF6MHZ
IC501 LC74201NE C-CUBE MPEG DECODER
AUD OUT
AU LRCK
AU EMPH
CD SD
CD BCK
CD CK
CD LRCK
CD C2P
CD EMPH
AS/DS
X501 14.31MHZ (NTSC)
XNT IN
XNT OUT
X502 17.73MHZ (PAL)
XPAL IN
XPAL OUT
RY0
RY7
GU1
GU7
BV1
BV7
H SYNC
C SYNC
FSCO
PCKO
BLANK
AA0
AA8
RAS 0
WE
CAS
RAST
OE
DD0
DD15
IC502 LC78011E DIGITAL RGB DAC NTSC/PAL ENCODER
GU0
FSC IN
CLKI
MPG RST
CDG SEL
NP SEL
Y OUT
CR OUT
LPF
Q503 VIDEO AMP
Q502 BUFFER
J501 VIDEO OUT
Q501, 504-506 BLANK
VM
Q602 SW
IC601 M5291EP DC-DC CONVERTER
Q603, 604 SW
Q601 REG
IC602 PQ20RV1E REG
+3.59V (IC501, 502 / IC504, 505)
IC504 HM514260 4M BIT DRAM
A0
A8
DQ0
DQ15
RAS
WE
IC505 LC321667CT-6 64KB ROM
A7
I/O1
I/O16
UW
LW
CAS
RAS
OE
IC181 GP1F32T DIGITAL OUT OPTICAL
PD UNIT
L-CH
A GND
R-CH
D GND
VM (T12V)
CDON
FROM MAIN UNIT
S303 OPEN
S302 UP
S301 DOWN
CN251
O-SW
I-SW
I-DISH, S
VM
VDD
PH1
PH2
FROM B FRONT C.B FC101
IC202 TA7291S TRAY MOTOR DRIVER
CLOSE
OPEN
CLOSE OUT+
OPEN OUT-
M201 TRAY MOTOR
O-DISH, F
O-DISH, R
Q202~207 TURN TABLE MOTOR DRIVER
D+
D-
CON8
T-T C.B
S401 CLOSE SW
PS401 SLIT SENSOR
Q411
LED411
DISK DET SENSOR
CN301
O CD LED
Q301 LED DRIVER
Q801~803 CD TRAY LIGHTING
LED C.B
16
9
8


W1
D ONLY
DIGITAL OUT (OPTICAL)
VIDEO OUT
(BLK)
(BRN)
IC181
J101
CON301
F ONLY
F ONLY
LED801
LED802
LED803
(CD TRAY LIGHTING)
CON801
LED C.B
(WHT)
(RED)
CON302
PIN851
S851
R851
R852
R853
NTSC←PAL→PAL
AUTO
(TV MODE)
VIDEO SW C.B
FROM MAIN UNIT
CN801
T-T C.B
W2
Q411, LED411
(DISC DETECT SENSOR)
S401
(CLOSE SW)
CON8
Q411
R414
R413
R415
LED411
M401
(DISH MOTOR)
<BLK>
<RED>
PS401
CD MOTOR C.B
SW1
(INSIDE LIMIT SW)
M20
(SPINDLE MOTOR)
M21
(SLED MOTOR)
PIN3
CN3
<ORG>
<BLK>
BLK
(BLK)
(ORG)
S301
(DOWN SW)
S302
(UP SW)
S303
(OPEN SW)
FROM MAIN UNIT
M201
(TRAY MOTOR)
IC601
Q603
Q604
IC502
IC501
IC504
IC505
IC251
CN251
CN102
X151
X301
X502
L501
L502
L503
L504
L601
Q601
Q205
Q206
Q207
C307
C255
VCD MAIN C.B
VCD MAIN C.B

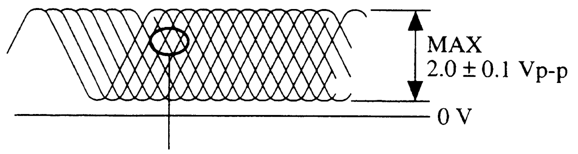
SCHEMATIC DIAGRAM-1



D ONLY
CD MECHANISM 3ZG-2C4N
OPTICAL PICK UP ASSY KSS-213B
FOCUS
TRACKING
CN101 16P
IC101 LA9241M RF SIGNAL SERVO PROCESSOR
IC102 LC78630E DIGITAL SIGNAL PROCESSOR
Q401 2SC2712GR RIPPLE FILTER
IC181 GP1F32T
DIGITAL OUT (OPTICAL)
IC401 (1/2) NJM2100M
IC401 (2/2) NJM2100M EQ AMP
Q402 HN1C03FB AUDIO MUTE
Q403 DTA123JK MUTE SW
BUS-1
+5V
+6V
D-GND
BUS-2
BUS-3
TO/FROM VCD MAIN C.B (2/2)
IC301 LC865632A-5E67 MICRO COMPUTER
VCD MAIN C.B (1/2)
VIDEO SW C.B
S851
TV MODE
NTSC
PAL AUTO
PAL
CN851 PH2P
CN302
CN601 6P H FE
TO/FROM MAIN UNIT
Q602 2SA1357Y
Q601 2SB1529Q
IC601 M5291FP DC-DC CONVERTER
Q603 DTA123JK
Q604 DTC124XK
TRAY MOTOR DRIVER
IC202 TA7291S
M201 TRAY MOTOR
IC251 LA6541 TRACKING·FOCUS COIL SPINDLE·SLED MOTOR DRIVER
CD MOTOR C.B
M20 (SPINDLE) MOTOR
M21 (SLED) MOTOR
SW1 INS10E LIMITER SW
CN102
CN251
Q202–Q207 TURN TABLE MOTOR DRIVER
Q205 2SD2172V/W
Q202 DTC143TK
Q204 2SC2001K
Q206 2SC2001K
Q203 DTC143TK
Q207 2SD2172V/W
D301 1SS184
D302 1SS184
Q301 DTC123JK LED DRIVER
LED801 SEL1250SM
LED802 SEL1250SM
LED803 SEL1550CM
CN301 2P
F ONLY
CN303
N.C
I/OBUSY
COMMAND
N.C
O-CD.LED
D-CLK
STATUS
I-SW
O-CLOSE
O-OPEN
O-DISH.F
O-DISH.R
I-DISH.S
AVREF
TO/FROM MAIN UNIT
PS401 SG-240
M401 (DISH MOTOR)
S401 (CLOSE SW)
LED411, Q411 (DISC DETECT SENSOR)
T-T C.B
CN8
○→WAVE FROM NO. SIGNAL
▶ CONTROL
→ ANALOG AUDIO
→ DIGITAL AUDIO
→ VIDEO SIGNAL

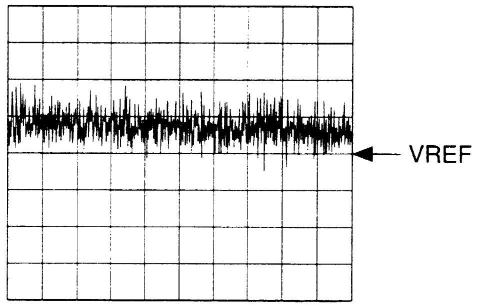
WAVE FORM

① IC101 Pin ㊶ (RFSM)
VOLT/DIV: 0.5V
TIME/DIV: 1µS

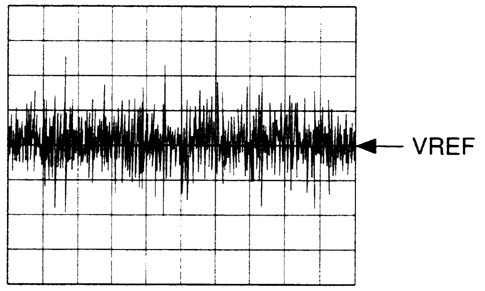

MAX
2.0 ± 0.1 Vp-p
0 V

EYE PATTERN
must CLEAR and MAX

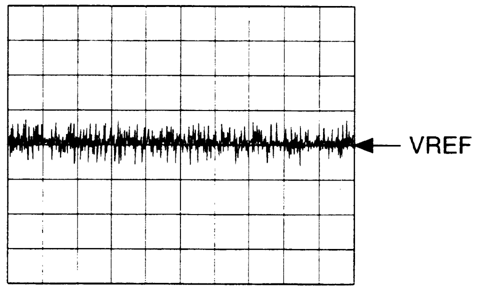
② IC101 Pin ⑯ (FD)
VOLT/DIV: 100mV
TIME/DIV: 1mS



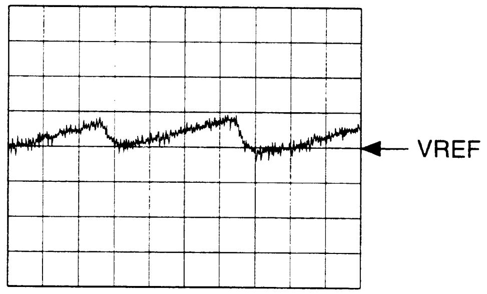
③ IC101 Pin ⑮ (TO)
VOLT/DIV: 100mV
TIME/DIV: 1mS



④ IC101 Pin ㉗ (SPD)
VOLT/DIV: 100mV
TIME/DIV: 1mS

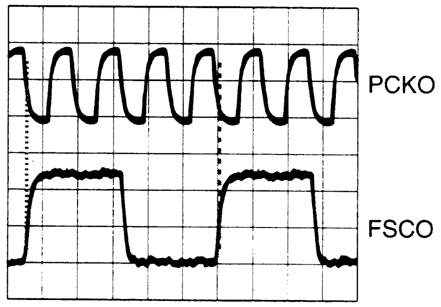


⑤ IC101 Pin ㉙ (SLD)
VOLT/DIV: 200mV
TIME/DIV: 2S

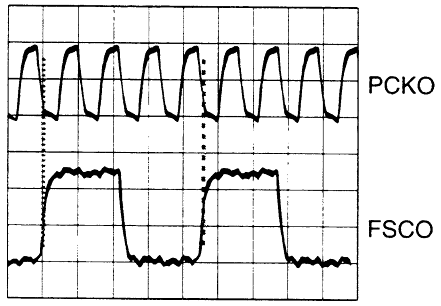


⑥ IC501 Pin ⑲ (PCKO)
IC501 Pin ⑱ (FSCO)
VOLT/DIV: 2V
TIME/DIV: 50nS

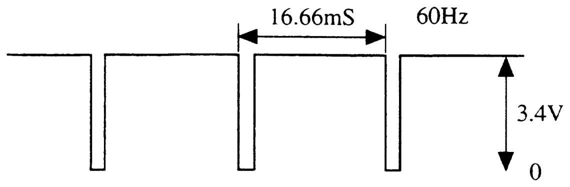
NTSC



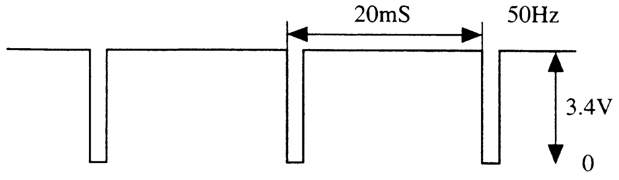
PAL, PAL 60



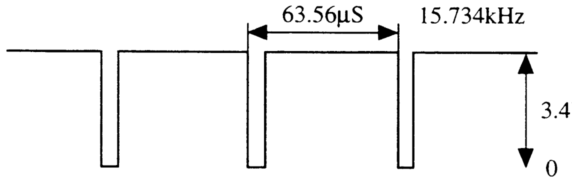
⑦ IC501 Pin ㉛ ($\overline{\text{C SYNC}}$)
VCD, PLAY
TV MODE: • NTSC
• PAL AUTO


16.66mS
60Hz
3.4V
0

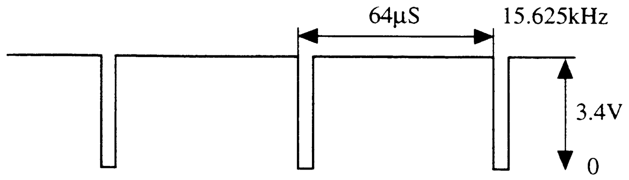
VCD, PLAY
TV MODE: PAL


20mS
50Hz
3.4V
0

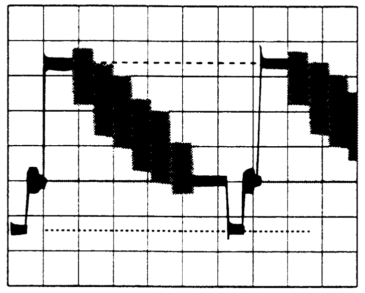
⑧ IC501 Pin ㉚ ($\overline{\text{H SYNC}}$)
VCD, PLAY
TV MODE: • NTSC
• PAL AUTO


63.56µS
15.734kHz
3.4V
0

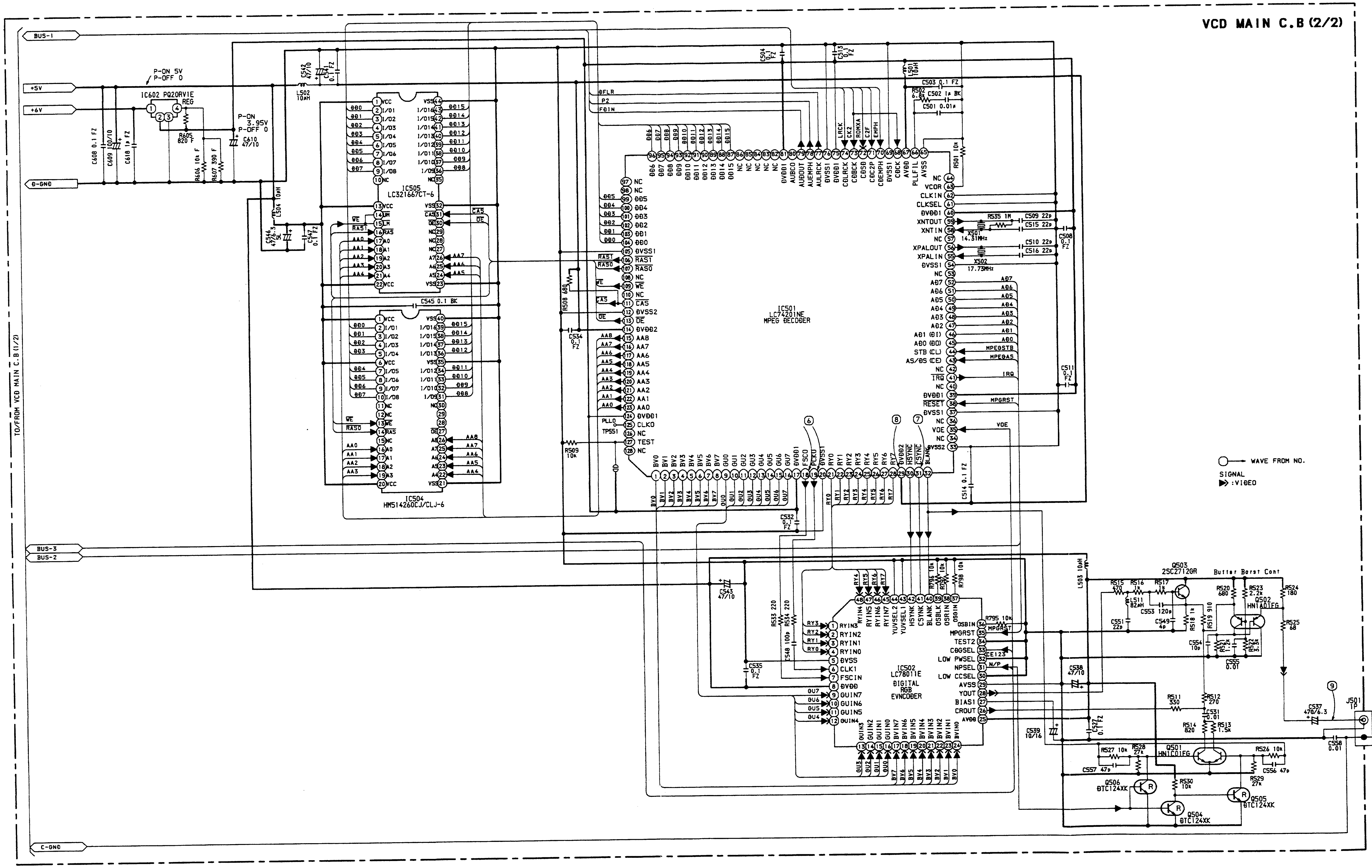
VCD, PLAY
TV MODE: PAL


64µS
15.625kHz
3.4V
0

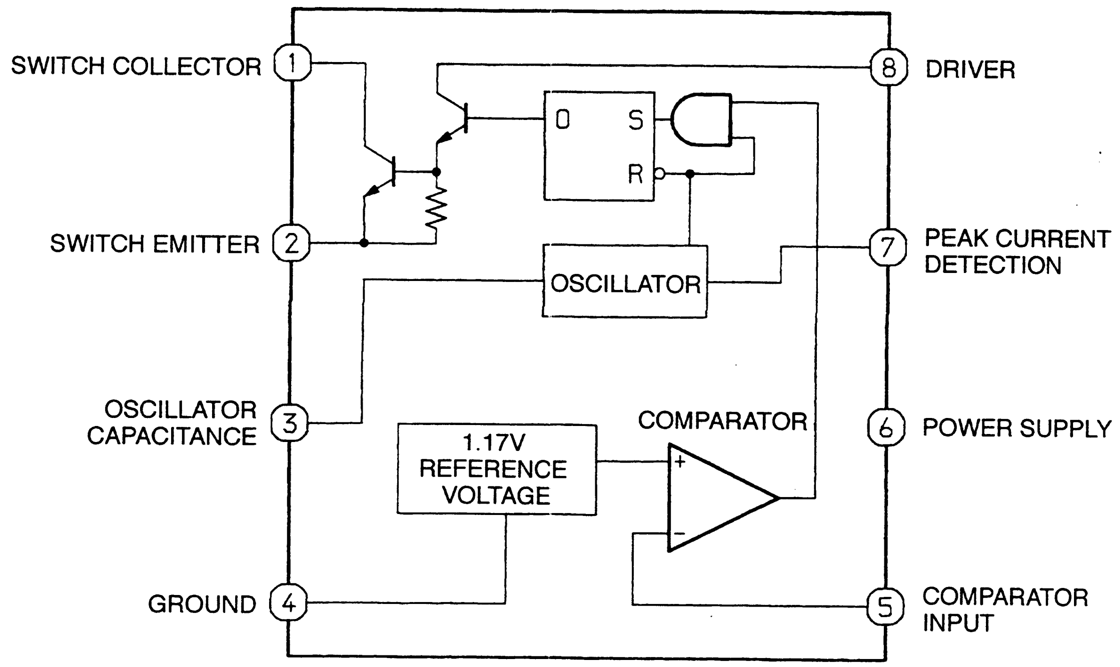
⑨ VIDEO OUT
C537 ⊖ side
VCD PLAY: CD-T05 TRACK4
TV MODE: • NTSC
VOLT/DIV: 200mV
TIME/DIV: 10µS
VOLT/DIV: 200mV
TIME/DIV: 10µS



SCHEMATIC DIAGRAM-2


VCD MAIN C.B (2/2)
BUS-1
+5V
+6V
D-GND
BUS-3
BUS-2
C-GND
TO/FROM VCD MAIN C.B (1/2)
P-ON 5V
P-OFF 0
IC602 PQ20RV1E
REG
P-ON 3.95V
P-OFF 0
C608 0.1 FZ
C609 100/10
C618 1μ FZ
R605 820 F
R606 10k F
R607 390 F
C610 47/10
C542 47/10
C541 0.1 FZ
L502 10μH
L504 10μH
C544 47/6.3
C547 0.1 FZ
IC505
LC321667CT-6
C545 0.1 BK
IC504
HM514260CJ/CLJ-6
R508 680
C534 0.1 FZ
R509 10k
IC501
LC74201NE
MPEG DECODER
C504 0.1 FZ
C513 0.1 FZ
L501 10μH
C503 0.1 FZ
R502 6.8k
C502 1μ BK
C501 0.01μ
R501 10k
R535 1M
C509 22p
C515 22p
X501 14.31MHz
C508 0.1 FZ
C510 22p
C516 22p
X502 17.73MHz
C511 0.1 FZ
C514 0.1 FZ
C532 0.1 FZ
C543 47/10
R533 220
R534 220
C548 100p
C535 0.1 FZ
IC502
LC78011E
DIGITAL RGB ENCODER
R796 10k
R797
R798 10k
R795 10k
L503 10μH
Q503 2SC2712GR
Buffer Burst Cont
R515 470
R516 1k
R517 1k
L511 82μH
C553 120p
R518 1k
R519 910
R520 680
R523 2.2k
R524 180
Q502 HN1A01FG
R525 68
C551 22p
C549 4p
C554 10p
R521 1.2k
R522 3.3k
C555 0.01
C538 47/10
R511 330
R512 270
C531 0.01
R514 820
R513 1.5k
C539 10/16
C527 0.1 FZ
C537 470/6.3
J501 1P
VIDEO OUT
C558 0.01
R527 10k
R528 27k
Q501 HN1C01FG
R526 10k
C557 47p
C556 47p
R529 27k
Q506 DTC124XK
R530 10k
Q505 DTC124XK
Q504 DTC124XK
WAVE FROM NO.
SIGNAL
:VIDEO

IC BLOCK DIAGRAM
IC, M5291FP


SWITCH COLLECTOR
1
8
DRIVER
D
S
R
SWITCH EMITTER
2
OSCILLATOR
7
PEAK CURRENT DETECTION
OSCILLATOR CAPACITANCE
3
1.17V REFERENCE VOLTAGE
COMPARATOR
+
−
6
POWER SUPPLY
GROUND
4
5
COMPARATOR INPUT

共通部分は、下記のページを参照して下さい。
Refer to the following pages for the common section.

■ IC BLOCK DIAGRAM

TA7291S	23ページ参照 See page 23
BA6897S	23ページ参照 See page 23

■ MECHANICAL EXPLODED VIEW/PARTS LIST

40ページ参照
See page 40

■ CD MECHANISM EXPLODED VIEW/PARTS LIST

42ページ参照
See page 42

IC DESCRIPTION
IC, LA9241M

端子番号	端子名称	I/O	機 能 説 明
1	FIN2	I	ピックアップのフォトダイオード接続用ピン。FIN1ピンとの加算でRF信号を生成し、減算でFE信号を生成する。
2	FIN1	I	ピックアップのフォトダイオード接続用ピン。
3	E	I	ピックアップのフォトダイオード接続用ピン。Fピンとの減算でTE信号を生成する。
4	F	I	ピックアップのフォトダイオード接続用ピン。
5	TB	I	TE信号のDC成分入力用ピン。
6	TE−	I	TE信号のゲイン設定用抵抗をTEピン間に接続するピン。
7	TE	O	TE信号出力ピン。
8	TESI	I	TES “Track Error Sence” コンパレータ入力ピン。TE信号をバンドパスし、入力する。
9	SCI	I	ショック検出用入力ピン。
10	TH	I	トラッキングゲイン時定数設定用ピン。
11	TA	O	TAアンプ出力ピン。
12	TD−	I	トラッキング位相補償定数をTD、VRピン間で構成するためのピン。
13	TD	I	トラッキング位相補償設定用ピン。
14	JP	I	トラッキングシャンプ信号 (キックパルス) 振幅設定用ピン。
15	TO	O	トラッキング制御信号出力ピン。
16	FD	O	フォーカシング制御信号出力ピン。
17	FD−	I	フォーカシング位相補償定数をFD、FAピン間で構成するためのピン。
18	FA	I	フォーカシング位相補償定数をFD−、FA−ピン間で構成するためのピン。
19	FA−	I	フォーカシング位相補償定数をFA、FEピン間で構成するためのピン。
20	FE	O	FE信号の出力ピン。
21	FE−	I	FE信号のゲイン設定用抵抗をFEピン間に接続するピン。
22	AGND	—	アナログ信号用GND。
23	NC	—	NO CONNECT
24	SP	O	CV+、CV−ピン入力信号のシングルエンド出力。
25	SPG	I	スピンドル12cmモード時ゲイン設定用抵抗接続ピン。
26	SP−	I	SPDピンとともにスピンドル位相補償定数接続用ピン。
27	SPD	O	スピンドル制御信号出力ピン。
28	SLEQ	I	スレッド位相補償定数接続用ピン。
29	SLD	O	スレッド制御信号出力ピン。
30、31	SL−、SL+	I	マイコンからのスレッド送り信号入力ピン。
32、33	JP−、JP+	I	DSPからのトラッキングジャンプ信号入力ピン。
34	TGL	I	DSPからのトラッキングゲインコントロール信号入力ピン。 TGL=「H」でゲインロー。
35	TOFF	I	DSPからのトラッキングオフコントロール信号入力ピン。 TOFF=「H」でオフ。
36	TES	O	TES信号をDSPへ出力するピン。
37	HFL	O	“High Frequency Level” は、メインビームの位置がビット上か、ミラー上かの判断に利用される。

端子番号	端子名称	I/O	機　能　説　明
38	SLOF	I	スレッドサーボオフコントロール入力ピン。
39、40	CV－、CV＋	I	DSPからのCLVエラー信号入力用ピン。
41	RFSM	O	RF出力ピン。
42	RFS－	I	RFSMピンとともにRFのゲイン設定およびEFM信号の3T補償定数設定用ピン。
43	SLC	O	“Slice Level Control”は、RF波形のDSPによるデータスライスのレベルを制御する出力ピン。
44	SLI	I	DSPによるデータスライスのレベルを制御するための入力ピン。
45	DGND	—	ディジタル系のGNDピン。
46	FSC	O	フォーカスサーチスムージングコンデンサ用出力ピン。
47	TBC	I	“Tracking Balance Control”EFバランス可変範囲用設定ピン。
48	NC	—	NO CONNECT
49	DEF	O	ディスクのディフェクト検出出力ピン。
50	CLK	I	基準クロック入力ピン。DSPの4.23MHzが入力される。
51	CL	I	マイコンコマンドクロック入力ピン。
52	DAT	I	マイコンコマンドデータ入力ピン。
53	CE	I	マイコンコマンドチップイネーブル入力ピン。
54	DRF	O	“Detect RF”RFレベル検出出力。
55	FSS	I	“Focus Serch Select”フォーカスサーチモード(基準電圧に対し±サーチ／＋サーチ)の切り換えピン。
56	VCC2	—	サーボ系、ディジタル系用VCCピン。
57	REFI	—	基準電圧用パスコン接続用ピン。
58	VR	O	基準電圧出力ピン。
59	LF2	I	ディスクのディフェクト検出時定数設定用ピン。
60	PH1	I	RF信号のピークホールド用コンデンサ接続用ピン。
61	BH1	I	RF信号のボトムホールド用コンデンサ接続用ピン。
62	LDD	O	APC回路出力ピン。
63	LDS	I	APC回路入力ピン。
64	VCC1	—	RF系VCCピン。

IC, LC78630E

端子番号	端子名称	I/O	機　能　説　明
1	VPDO	O	バリピッチ用PLLのチャージポンプ出力端子。未使用時“OPEN”とすること。
2	PDO2	O	2倍速、4倍速時のビットクロック再生用PLLのチャージポンプ出力端子。未使用時“OPEN“とすること。
3	PDO1	O	通常速時のビットクロック再生用PLLのチャージポンプ出力端子。
4	AVSS	—	アナログ系接地端子。通常0V。
5	FR	I	内蔵VCO周波数レンジ設定用抵抗接続端子。
6	AVDD	—	アナログ系電源端子。
7	ISET	I	PDO1、PDO2出力電流設定用抵抗接続端子。
8	TAI	I	テスト用入力端子。プルダウン抵抗内蔵。
9	EFMO	O	EFM信号出力端子。
10	VSS	—	ディジタル系接地端子。通常0V。
11	EFMI	I	EFM信号入力端子。
12	TEST1	I	テスト用入力端子。プルダウン抵抗内蔵。
13	CLV+	O	スピンドルサーボ制御用出力端子。CLV+が「H」で加速、CLV-が「H」で減速。
14	CLV-	O	
15	V/$\overline{P}$	O	ラフサーボ／位相制御の自動切換えモニタ出力端子。「H」でラフサーボ、「L」で位相制御モード。
16、17	TEST2、TEST3	I	テスト用入力端子。プルダウン抵抗内蔵。
18	P4	I/O	入出力ポート。
19	HFL	I	トラック検出信号入力端子。シュミット入力。
20	TES	I	トラッキング誤差信号入力端子。シュミット入力。
21	PCK	O	EFMデータ再生用ビットクロックモニタ端子。通常速再生での位相ロック時4.3218MHz。
22	FSEQ	O	同期信号検出出力端子。EFM信号から検出した同期信号と内部生成の同期信号が一致した時に「H」。
23	TOFF	O	トラッキングOFF出力端子。
24	TGL	O	トラッキングゲイン切換え用出力端子。「L」でゲインを上げる。
25	THLD	O	トラッキングホールド出力端子。
26	TEST4	I	テスト用入力端子。プルダウン抵抗内蔵。
27	VDD	—	ディジタル系電源端子。
28、29	JP+、JP-	O	トラックジャンプ用出力端子。JP+が「H」で外周方向ジャンプ時の加速または内周方向ジャンプ時の減速。JP-が「H」で内周方向ジャンプ時の加速または外周方向ジャンプ時の減速。
30、31	SLD+、SLD-	O	スレッド出力端子。コマンドにより4レベル設定可能。
32	EMPH	O	エンファシスのモニタ端子。「H」の時エンファシス・ディスク再生中。
33	P5	I/O	入出力ポート。
34	LRCKO	O	ディジタルフィルタ出力・LRクロック出力端子。
35	DFLRO	O	ディジタルフィルタ出力・LRデータ出力端子。DFOFFコマンドによりDFをOFF。
36	DACKO	O	ディジタルフィルタ出力・ビットクロック出力端子。
37	CONT1	O	出力ポート。

端子番号	端子名称	I/O	機　能　説　明
38	P0/DFCK	I/O	入出力ポート。アンチショックモード時は、DFのビットクロック入力端子。
39	P1/DFIN	I/O	入出力ポート。アンチショックモード時は、DFのデータ入力端子。
40	P2	I/O	入出力ポート。アンチショックモード時は、ディエンファシス・フィルタのON／OFF切換え入力端子。「H」でディエンファシス・フィルタON。
41	P3/DFLR	I/O	入出力ポート。アンチショックモード時は、DFのLRクロック入力端子。
42	LRSY	O	ROMXA用・LRクロック出力端子。
43	CK2	O	ROMXA用・ビットクロック出力端子。CK2CONコマンドにより極性反転。
44	ROMXA	O	ROMXA用・補助データ出力端子。ROMXAコマンドにより補間されないデータを出力。
45	C2F	O	ROMXA用・C2フラグ出力端子。
46	MUTEL	O	1bit DAC用・Lチャネルミュート出力端子。
47	LVDD	—	1bit DAC用・Lチャネル用電源端子。
48	LCHP	O	1bit DAC用・LチャネルP出力端子。
49	LCHN	O	1bit DAC用・LチャネルN出力端子。
50	LVSS	—	1bit DAC用・Lチャネル用接地端子。通常0V。
51	XVSS	—	水晶発振用接地端子。通常0V。
52	XOUT	O	16.9344MHz水晶振発振子の接続端子。
53	XIN	I	4倍速再生は33.8688MHz水晶振発振子を接続。
54	XVDD	—	水晶発振用電源端子。
55	RVSS	—	1bit DAC用・Rチャネル用接地端子。通常0V。
56	RCHN	O	1bit DAC用・RチャネルN出力端子。
57	RCHP	O	1bit DAC用・RチャネルP出力端子。
58	RVDD	—	1bit DAC用・Rチャネル用電源端子。
59	MUTER	O	1bit DAC用・Rチャネルミュート出力端子。
60	SBSY	O	サブコードブロックの同期信号出力端子。
61	EFLG	O	C1、C2のエラー訂正モニタ端子。
62	PW	O	サブコードP、Q、R、S、T、U、V、Wの出力端子。
63	SFSY	O	サブコードのフレーム同期信号出力端子。サブコードがスタンバイした時立下がる。
64	SBCK	I	サブコード読み出しクロック入力端子。シュミット入力。未使用時は接地すること。
65	DOUT	O	ディジタルOUT出力端子。
66	FSX	O	水晶発振から分周した7.35kHz同期信号出力端子。
67	WRQ	O	サブコードQ出力スタンバイ出力端子。
68	RWC	I	リード／ライト制御入力端子。
69	SQOUT	O	サブコードQ出力端子。
70	COIN	I	マイコンからコマンド入力端子。
71	$\overline{\text{CQCK}}$	I	コマンド入力取り込みクロック、またはSQOUTからのサブコード読み出しクロック入力端子。シュミット入力。
72	$\overline{\text{RES}}$	I	チップリセット入力端子。電源投入時に一旦「L」にする。
73	TESTF	O	テスト用出力端子。

端子番号	端子名称	I/O	機 能 説 明
74	CONT2	O	出力ポート。
75	16M	O	16.9344MHz出力端子。4倍速再生モード時は、33.8688MHz出力。
76	4.2M	O	4.2336MHz出力端子。
77	TEST5	I	テスト用入力端子。プルダウン抵抗内蔵。
78	$\overline{\text{CS}}$	I	チップセレクト入力端子。プルダウン抵抗内蔵。
79	DEFI	I	ディフェクト検出信号入力端子。未使用時は接地すること。
80	VCOC	I	バリピッチ用 VCOの制御入力端子。未使用時は接地すること。

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端子番号	端子名称	I/O	機能説明
1	IRQ	I	MPEGインタラプトリクエスト信号入力。
2	I-WRQ	I	CD WRQ入力信号。
3、4	CDGM、CDG-CS	I	未使用。
5	O-WRC	O	CD リード／ライト制御信号出力。
6	PAL NTSC	O	MPEG PAL/NTSC　モード選択信号出力。(L＝PAL)
7、8	SLED＋、SLED－	O	スレッド送り信号出力。
9	CD-RST	O	CD リセット端子。
10	MPFG-RST	O	MPEG リセット端子。
11	X-BUSY	I/O	ホストCPUインターフェースビジー信号。
12	NC	—	未使用。
13	CE123	O	VCD/CDGモード制御信号出力。(H＝VCD)
14	VOE	O	ビデオ出力イネーブル信号出力。(H＝VCD)
15、16	CDG CE、CDG CLK	O	未使用。
17、18	CDG DATA、GINTI	O	
19、20	GMUTE、GPAL	O	
21、22	SADJ、XWCDG	I	
23	VSS	—	GND。
24	VDD	—	電源端子。
25	XAMUTE	O	アナログオーディオミュート信号出力。(L＝MUTE)
26～30	NC	—	未使用。
31、32	PAL60、OSDCS	O	
33～40	AD0-AD7	I/O	MPEGデータ入出力。
41	CD-DATA	O	CDコマンドデータ出力。
42	SUBQ-IN	I	サブコードQ信号入力。
43	CD-CLK	O	CDクロック信号出力。
44	STATUS	O	ホストCPUへのステータス信号出力。
45	COMMAND	I	ホストCPUからのコマンドデータ入力。
46	CLK	I	ホストCPUからのクロック信号入力。
47	AS	O	MPEGアドレス／シリアルデータ出力。
48	STB	O	MPEGストローブ信号出力。
49	TEST	—	未使用。
50	RESET	—	リセット端子。
51、52	XT1、XT2	—	未使用。
53	VSS	—	GND。
54	CF1	I	6MHz発振子入力端子。
55	CF2	O	
56	VDD	—	電源端子。
57	SWIL	I	CDピックアップ最内周検出信号入力。
58	DRF-IN	I	“Detect RF” RFレベル検出信号入力。
59	P/PA/N	I	PAL/PAL AUTO/NTSCモード選択信号入力。(H＝PAL/PAL AUTO、L＝NTSC)
60～64	NC	—	未使用。

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<table>
<tr><th>端子番号</th><th>端子名称</th><th>I/O</th><th>機 能 説 明</th></tr>
<tr><td>1〜3</td><td>RYIN3〜RYIN1</td><td>I</td><td>R/Yデータ入力。</td></tr>
<tr><td>4</td><td>RYIN0</td><td>I</td><td>R/Yデータ入力。(LSB)</td></tr>
<tr><td>5</td><td>DVSS</td><td>—</td><td>デジタル系GND。</td></tr>
<tr><td>6</td><td>CLKI</td><td>I</td><td>4fscクロック入力。 (NTSC: 14.31818MHz)
(PAL: 17.734475MHz)
(PAL-M: 14.3024459MHz)</td></tr>
<tr><td>7</td><td>FSCIN</td><td>I</td><td>サブキャリアクロック入力。 (NTSC: 3.579545MHz)
(PAL: 4.4336187MHz)
(PAL-M: 3.5756114MHz)</td></tr>
<tr><td>8</td><td>DVDD</td><td>—</td><td>デジタル系電源。</td></tr>
<tr><td>9</td><td>GUIN7</td><td>I</td><td>G/Uデータ入力。(MSB)</td></tr>
<tr><td>10〜15</td><td>GUIN6〜GUIN1</td><td>I</td><td>G/Uデータ入力。</td></tr>
<tr><td>16</td><td>GUIN0</td><td>I</td><td>G/Uデータ入力。(LSB)</td></tr>
<tr><td>17</td><td>BVIN7</td><td>I</td><td>B/V/UVデータ入力。(MSB)</td></tr>
<tr><td>18〜23</td><td>BVIN6〜BVIN1</td><td>I</td><td>B/V/UVデータ入力。</td></tr>
<tr><td>24</td><td>BVIN0</td><td>I</td><td>B/V/UVデータ入力。(LSB)</td></tr>
<tr><td>25</td><td>AVDD</td><td>—</td><td>アナログ系電源。</td></tr>
<tr><td>26</td><td>CROUT</td><td>O</td><td>色／複合映像信号 (アナログ) 出力。(8bits-DAC出力)</td></tr>
<tr><td>27</td><td>BIAS</td><td>O</td><td>リップル除去用コンデンサー接続。</td></tr>
<tr><td>28</td><td>YOUT</td><td>O</td><td>輝度信号 (アナログ) 出力 (8bits-DAC出力)。</td></tr>
<tr><td>29</td><td>AVSS</td><td>—</td><td>アナログ系GND。</td></tr>
<tr><td>30</td><td>CCSEL</td><td>I</td><td>出力信号制御。(色信号出力: 0、複合映像信号出力: 1)</td></tr>
<tr><td>31</td><td>NPSEL</td><td>I</td><td rowspan="2">
<table>
<tr><th>NPSEL</th><th>PMSEL</th><th>設定信号モード</th></tr>
<tr><td>0</td><td>0</td><td>NTSC</td></tr>
<tr><td>1</td><td>0</td><td>PAL</td></tr>
<tr><td>0</td><td>1</td><td>PAL-M</td></tr>
<tr><td>1</td><td>1</td><td>——————</td></tr>
</table>
</td></tr>
<tr><td>32</td><td>PMSEL</td><td>I</td></tr>
<tr><td>33</td><td>CDGSEL</td><td>I</td><td>ビデオCD/CD-G入力モード制御端子。(V-CD=0、CD-G=1)</td></tr>
<tr><td>34</td><td>TEST</td><td>I</td><td>テストモード入力。通常は “L” に固定すること。</td></tr>
<tr><td>35</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>リセット信号入力。</td></tr>
<tr><td>36</td><td>OSBIN</td><td>I</td><td>OSD (B) 信号入力端子。</td></tr>
<tr><td>37</td><td>OSGIN</td><td>I</td><td>OSD (G) 信号入力端子。</td></tr>
<tr><td>38</td><td>OSRIN</td><td>I</td><td>OSD (R) 信号入力端子。</td></tr>
<tr><td>39</td><td>OSBLK</td><td>I</td><td>OSD切り替え信号 (OSD BLANK) 入力端子。</td></tr>
<tr><td>40</td><td>BLANK</td><td>I</td><td>コンポジットBLANK (HBLANK/VBLANK) 信号入力。</td></tr>
<tr><td>41</td><td>$\overline{\text{CSYNC}}$</td><td>I</td><td>CSYNC同期信号入力。</td></tr>
<tr><td>42</td><td>$\overline{\text{HSYNC}}$</td><td>I</td><td>HSYNC同期信号入力。</td></tr>
</table>

<table>
<tr><th>端子番号</th><th>端子名称</th><th>I/O</th><th>機能説明</th></tr>
<tr><td>43</td><td>YUVSEL1</td><td>I</td><td rowspan="2"><table>
<tr><th>YUVSEL1</th><th>YUVSEL2</th><th>入力モード</th></tr>
<tr><td>0</td><td>0</td><td>RYIN=R、GUIN=G、BVIN=B</td></tr>
<tr><td>1</td><td>0</td><td>RYIN=Y、GUIN=U、BVIN=V</td></tr>
<tr><td>0</td><td>1</td><td>RYIN=Y、BVIN=UV</td></tr>
<tr><td>1</td><td>1</td><td>————</td></tr>
</table></td></tr>
<tr><td>44</td><td>YUVSEL2</td><td>I</td></tr>
<tr><td>45</td><td>RYIN7</td><td>I</td><td>R/Yデータ入力。(MSB)</td></tr>
<tr><td>46～48</td><td>RYIN6～RYIN4</td><td>I</td><td>R/Yデータ入力。</td></tr>
</table>

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端子番号	端子名称	I/O	機能説明
1	BV0 (LSB)	I/O	ビデオ信号出力。(B信号、V信号)　出力: DVDD1 (3V) 系の3-state出力。
2～4	BV1～BV3		
5～7	BV4～BV6	I/O	ビデオ信号出力。(B信号、V信号)　出力: DVDD2 (5V) 系の3-state出力。
8	BV7 (MSB)		
9	GU0 (LSB)	I/O	ビデオ信号出力。(G信号、U信号)　出力: DVDD1 (3V) 系の3-state出力。
10～12	GU1～GU3		
13～15	GU4～GU6	I/O	ビデオ信号出力。(G信号、U信号)　出力: DVDD2 (5V) 系の3-state出力。
16	GU7 (MSB)		
17	DVDD1	—	システム電源。(3V系電源: 3.3±0.3V)
18	FSCO	O	サブキャリア・クロック出力。(ピクセル・クロックの1/4分周出力) DVDD2 (5V) 系の3-state出力。
19	PCKO	O	ピクセル・クロック出力。(NTSC-4fsc/PAL-4fsc/13.5MHz) DVDD1 (3V) 系の3-state出力。
20	DVSS1	—	システム電源。(GND接地)
21	RY0 (LSB)	I/O	ビデオ信号出力。(R信号、Y信号)　出力: DVDD1 (3V) 系の3-state出力。
22～24	RY1～RY3		
25～27	RY4～RY6	I/O	ビデオ信号出力。(R信号、Y信号)　出力: DVDD2 (5V) 系の3-state出力。
28	RY7 (MSB)		
29	DVDD2	—	5V系入出力端子用電源。(5.0±0.5V)
30	$\overline{\text{HSYNC}}$	O	水平同期信号出力。DVDD2 (5V) 系の3-state出力。
31	$\overline{\text{CSYNC}}$	O	複合同期信号出力。DVDD2 (5V) 系の3-state出力。
32	BLANK	O	ブランキング信号出力。(垂直、水平ブランキング期間信号) DVDD2 (5V) 系の3-state出力。
33	DVSS2	—	5V系入出力端子用電源。(GND接地)
34	NC	—	未接続端子。
35	VOE	I	ビデオ出力イネーブル信号入力。“H”: 出力イネーブル
36	NC	—	未接続端子。
37	DVSS1	—	システム電源。(GND接地)
38	$\overline{\text{RESET}}$	I	システム・リセット入力。
39	DVDD1	—	システム電源。(3V系電源: 3.3±0.3V)
40	NC	—	未接続端子。
41	$\overline{\text{IRQ}}$	O	割り込み要求信号出力。(N-chオープン・ドレイン出力)
42	NC	—	未接続端子。
43	AS/DS (CE)	I	パラレル時: アドレス／データ入力切り換え。(“L”＝アドレス) シリアル時: シリアル転送イネーブル信号入力。(“H”＝イネーブル)
44	STB (CL)	I	パラレル時: アドレス／データ入出力・ストローブ信号入力。 シリアル時: シリアル転送用クロック信号入力。
45	AD0 (DO)	I/O	パラレル時: アドレス／データ入出力ポートP0。(LSB) シリアル時: シリアル・データ出力。(LSBファースト入力)
46	AD1 (DI)	I/O	パラレル時: アドレス／データ入出力ポートP1。 シリアル時: シリアル・データ入力。(LSBファースト出力)

端子番号	端子名称	I/O	機　能　説　明
47～51	AD2～AD6	I/O	パラレル・インターフェース時のアドレス／データ入出力ポート。 インターフェースのモードは、システム・リセット解除時に設定。 AD3、AD4、AD5の3ビットの設定により、モードを確定。 ① シリアル・インターフェース:「AD5:AD4:AD3＝1:＊:＊」＊＝Don't care ② パラレル・インターフェース:「AD5:AD4:AD3＝0:1:0」 AD7: パラレル時のアドレス／データ入出力ポートP7。(MSB) AD0～AD7の出力は、N-chオープン・ドレイン出力形式。
52	AD7 (MSB)	I/O	
53	NC	—	未接続端子。
54	DVSS1	—	システム電源。(GND接地)
55	XPALIN	I	PAL用4fsc水晶発振子接続端子。(4fsc＝17.734476MHz)
56	XPALOUT	O	
57	NC	—	未接続端子。
58	XNTIN	I	NTSC用4fsc水晶発振子接続端子。(4fsc＝14.31818MHz)
59	XNTOUT	O	
60	DVDD1	—	システム電源。(3V系電源: 3.3±0.3V)
61	CLKSEL	I	54.0MHz クロック入力 (CLKIN: 62pin) と内部VCO発振クロックの切り換え制御入力。“H”: CLKIN端子入力モード
62	CLKIN	I	54.0MHz クロック入力端子 (内部バイアス付き入力) 未使用時は、端子処理 (DVDD1または、DVSS1) して下さい。
63	VCOR	—	VCO発振回路の調整用抵抗接続端子。
64	NC	—	未接続端子。
65	AVSS	—	VCO、PLL部用電源。(GND接地)
66	PLLFIL	—	PLLループのフィルター接続端子。
67	AVDD	—	VCO、PLL部用電源。(3V系電源: 3.3±0.3V)
68	CDCK	I	CD-DSPクロック入力。(16.9344MHz/2.8224MHz/2.1168MHz)
69	DVSS1	—	システム電源。(GND接地)
70	CDEMPH	I	エンファシス入力。
71	CDC2P	I	C2エラー・フラグ入力。
72	CDSD	I	シリアル・データ入力。
73	CDBCK	I	シリアル・データ・ビットクロック入力。
74	CDLRCK	I	Left/Rightクロック入力。
75	DVDD1	—	システム電源。(3V系電源: 3.3±0.3V)
76	DVSS1	—	システム電源。(GND接地)
77	AULRCK	O	オーディオ・データ　Left/Rightクロック出力。(N-chオープン・ドレイン出力)
78	AUEMPH	O	オーディオ・エンファシス・フラグ出力。(N-chオープン・ドレイン出力)
79	AUDOUT	O	オーディオ・データ　シリアル出力。(N-chオープン・ドレイン出力)
80	AUBCO	O	オーディオ・データ　ビット・クロック出力。(N-chオープン・ドレイン出力)
81	DVDD1	—	システム電源。(3V系電源: 3.3±0.3V)
82～86	NC	—	未接続端子。
87	DD15 (MSB)	I/O	DRAMへのデータ入出力。出力: DVDD2 (5V) 系の3-state出力。
88～96	DD14～DD6		

端子番号	端子名称	I/O	機　能　説　明
97、98	NC	—	未接続端子。
99～103	DD5～DD1	I/O	DRAMへのデータ入出力。出力: DVDD2 (5V) 系の3-state出力。
104	DD0 (LSB)		
105	DVSS1	—	システム電源。(GND接地)
106	$\overline{\mathrm{RAS1}}$	O	拡張1M-DRAMへのRaw address strobe信号出力。DVDD2 (5V) 系の3-state出力。
107	$\overline{\mathrm{RAS0}}$	O	4M-DRAMへのRaw address strobe信号出力。DVDD2 (5V) 系の3-state出力。
108	NC	—	未接続端子。
109	$\overline{\mathrm{WE}}$	O	DRAMへのWrite enable信号出力。DVDD2 (5V) 系の3-state出力。
110	NC	—	未接続端子。
111	$\overline{\mathrm{CAS}}$	O	DRAMへのColumn address strobe信号出力。DVDD2 (5V) 系の3-state出力。
112	DVSS2	—	5V系入出力端子用電源。(GND接地)
113	$\overline{\mathrm{OE}}$	O	DRAMへのOutput enable信号出力。DVDD2 (5V) 系の3-state出力。
114	DVDD2	—	5V系入出力端子用電源。(5.0±0.5V)
115	AA8 (MSB)	O	DRAMへのアドレス出力。出力: DVDD2 (5V) 系の3-state出力。
116～122	AA7～AA1		
123	AA0 (LSB)		
124	DVDD1	—	システム電源。(3V系電源: 3.3±0.3V)
125	CLKO	O	テスト時のVCO、PLL部クロック出力。
126	NC	—	未接続端子。
127	TEST	I	テストモード動作制御端子。(通常: “L” に固定)
128	NC	—	未接続端子。

IC, LA9241M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES “Track Error Sense” comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	“High Frequency Level” is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	“Slice Level Control” is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	“Tracking Balance Control” EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	“Detect RF” RF level detector output.
55	FSS	I	“Focus Search Select” focus search mode (± search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78630E

Pin No.	Pin Name	I/O	Description
1	VPDO	O	Vari-pitch PLL charge pump output pin. This pin must be open when not used.
2	PDO2	O	Bit clock playback PLL charge pump output pin during 2 times and 4 times speed. This pin must be open when not used.
3	PDO1	O	Bit clock playback PLL charge pump output pin during normal speed.
4	AVSS	—	Analog system GND. Normally 0V.
5	FR	I	An external resistor to set built-in VCO frequency range is connected to this pin.
6	AVDD	—	Analog system GND.
7	ISET	I	An external resistor set PD01 and PD02 output current is connected to this pin.
8	TAI	I	Test input pin with built-in pull-down resistor.
9	EFMO	O	EFM signal output pin.
10	VSS	—	Digital system GND. Normally 0V.
11	EFMI	I	EFM signal input pin.
12	TEST1	I	Test input pin with built-in pull-down resistor.
13	CLV+	O	Spindle servo control output pin. Acceleration when CLV+ is “H”.
14	CLV-	O	Deceleration when CLV- is “H”.
15	$V/\overline{P}$	O	Rough servo/phase control automatic selection monitoring output pin. Rough servo at “H”. Phase control mode at “L”.
16, 17	TEST2, TEST3	I	Test input pin with built-in pull-down resistor.
18	P4	I/O	Input/output port.
19	HFL	I	Tracking detection signal input pin. Schmitt input.
20	TES	I	Tracking error signal input pin. Schmitt input.
21	PCK	O	EFM data playback bit clock monitoring pin. 4.3218 MHz when phase is locked during normal speed playback.
22	FSEQ	O	Sync signal detection output pin. When the sync signal detected from the EFM signal agrees with the internally generated sync signal, “H” output.
23	TOFF	O	Tracking OFF output pin.
24	TGL	O	Tracking gain selector output pin. Gain is increased at “L”.
25	THLD	O	Tracking hold output pin.
26	TEST4	I	Test input pin with built-in pull-down resistor.
27	VDD	—	Digital system GND.
28, 29	JP+, JP-	O	Tracking jump output pin. JP+ “H” occurs at acceleration during jump toward outside or decelerator toward inside. JP- “H” occurs at acceleration during jump toward inside or deceleration toward outside.
30, 31	SLD+, SLD-	O	Sled output pin. Four different level can be set using commands.
32	EMPH	O	Emphasis monitoring output. “H” indicates that emphasis disc is being played back.
33	P5	I/O	Input/output.
34	LRCKO	O	Digital filter output. LR clock output pin.
35	DFLRO	O	Digital filter output. LR data output pin. DF is turned OFF with the DFOFF command.
36	DACKO	O	Digital filter output. Bit clock output pin.
37	CONT1	O	Output port.
38	P0/DFCK	I/O	Input/output port. The DF bit clock input pin during the anti-shock mode.
39	P1/DFIN	I/O	Input/output port. The DF data input pin during the anti-shock mode.
40	P2	I/O	Input/output port. Deemphasis filter ON/OFF selection input pin during the anti-shock mode. Deemphasis filter ON at “H”.
41	P3/DFLR	I/O	Input/output port. The DF LR clock input pin during the anti-shock mode.
42	LRSY	O	For ROMXA • LR clock output pin.
43	CK2	O	For ROMXA • Bit clock output pin. Polarity inversion by the CK2CON command.
44	ROMXA	O	For ROMXA • Interpolation data output pin. The un-interpolated data is output with the ROMXA command.
45	C2F	O	For ROMXA • C2 flat output pin.
46	MUTEL	O	For 1-bit DAC • L-channel mute output pin.
47	LVDD	—	For 1-bit DAC • L-channel power supply.
48	LCHP	O	For 1-bit DAC • L-channel P output pin.
49	LCHN	O	For 1-bit DAC • L-channel N output pin.
50	LVSS	—	For 1-bit DAC • L-channel GND. Normally 0 V.
51	XVSS	—	Crystal oscillator GND. Normally 0 V.
52	XOUT	O	An external 16.9344 MHz crystal oscillator is connected to this pin.
53	XIN	I	33.8688 MHz crystal oscillator is connected during 4 time speed playback.
54	XVDD	—	Crystal oscillator GND.
55	RVSS	—	For 1-bit DAC • R-channel GND. Normally 0 V.
56	RCHN	O	For 1-bit DAC • R-channel N output pin.
57	RCHP	O	For 1-bit DAC • R-channel P output pin.
58	RVDD	—	For 1-bit DAC • R-channel power supply.
59	MUTER	O	For 1-bit DAC • R-channel mute output pin.
60	SBSY	O	Subcode block sync signal output pin.
61	EFLG	O	C1 and C2 error correction monitoring pin.
62	PW	O	ubcode P, Q, R, S, T, U, V and W output pin.
63	SFSY	O	Subcode frame sync signal output pin. The level falls down when the subcode is in standby.
64	SBCK	I	Subcode read clock input pin. Schmitt input. This pin must be connected GND when not used.
65	DOUT	O	Digital output pin.
66	FSX	O	7.35 kHz sync signal divided from the crystal oscillator is output to this pin.
67	WRQ	O	Subcode Q output standby output pin.
68	RWC	I	Read/write control input pin.
69	SQOUT	O	Subcode Q output pin.
70	COIN	I	Microprocessor command input pin.
71	$\overline{CQCK}$	I	Command input read clock or subcode read clock input from SQOUT. Schmitt input.
72	$\overline{RES}$	I	Chip reset input pin. This pin goes to “L” once when the main power is turned on.
73	TESTF	O	Test output pin.
74	CONT2	O	Output port.

Pin No.	Pin Name	I/O	Description
75	16M	O	16.9344 MHz crystal output pin. 33.8688 MHz is output during 4 times speed playback.
76	4.2M	O	4.2336 MHz output pin.
77	TEST5	I	Test input pin with built-in pull-down resistor.
78	$\overline{CS}$	I	Chip select input pin with built-in pull-down resistor.
79	DEFI	I	Defect detection signal input pin. This pin must be connected GND when not used.
80	VCOC	I	Vari-pitch VCO control input pin. This pin must be connected GND when not used.

IC, LC865632A-5E67

Pin No.	Pin Name	I/O	Description
1	IRQ	I	MPEG interrupt request input signal.
2	I-WRQ	I	CD WRQ input signal.
3, 4	CDGM, CDG-CS	I	Not used.
5	O-WRC	O	CD read/write control signal output.
6	PAL NTSC	O	MPEG PAL/NTSC mode selection signal output. (L = PAL).
7, 8	SLED+, SLED–	O	Sled advance signal output.
9	CD-RST	O	CD reset terminal.
10	MPFG-RST	O	MPEG reset terminal.
11	X-BUSY	I/O	Host CPU interface busy signal.
12	NC	—	Not used.
13	CE123	O	VCD/CDG mode control signal output. (H = VCD).
14	VOE	O	Video output enable signal output. (H = VCD).
15, 16	CDG CE, CDG CLK	O	Not used.
17, 18	CDG DATA, GINTI	O	
19, 20	GMUTE, GPAL	O	
21, 22	SADJ, XWCDG	I	
23	VSS	—	GND.
24	VDD	—	Power supply terminal.
25	XAMUTE	O	Analog audio mute signal output. (L = MUTE).
26-30	NC	—	Not used.
31, 32	PAL60, OSDCS	O	
33-40	AD0-AD7	I/O	MPEG data input/output.
41	CD-DATA	O	CD command data output.
42	SUBQ-IN	I	Subcode Q signal input.
43	CD-CLK	O	CD clock signal output.
44	STATUS	O	Status signal output to host CPU.
45	COMMAND	I	Command data input from host CPU.
46	CLK	I	Clock signal input from host CPU.
47	AS	O	MPEG address/serial data output.
48	STB	O	MPEG strobe signal output.
49	TEST	—	Not used.
50	RESET	—	Reset terminal.
51, 52	XT1, XT2	—	Not used.
53	VSS	—	GND.
54	CF1	I	6 MHz oscillator input terminal.
55	CF2	O	6 MHz oscillator output terminal.
56	VDD	—	Power supply terminal.
57	SWIL	I	CD pickup inner circumference limit signal input.
58	DRF-IN	I	"Detect RF" RF level detection signal input.
59	P/PA/N	I	PAL/PAL or AUTO/NTSC mode selection signal input. (H = PAL/PAL, L = AUTO/NTSC).
60-64	NC	—	Not used.

IC, LC78011E

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1-3</td><td>RYIN3-RYIN1</td><td>I</td><td>R/Y data input.</td></tr>
<tr><td>4</td><td>RYIN0</td><td>I</td><td>R/Y data input. (LSB).</td></tr>
<tr><td>5</td><td>DVSS</td><td>—</td><td>Digital system ground.</td></tr>
<tr><td>6</td><td>CLKI</td><td>I</td><td>4 fsc clock input. (NTSC: 14.31818 MHz)
(PAL: 17.734475 MHz)
(PAL-M: 14.3024459 MHz).</td></tr>
<tr><td>7</td><td>FSCIN</td><td>I</td><td>Subcarrier clock input. (NTSC: 3.589545 MHz)
(PAL: 4.4336187 MHz)
(PAL-M: 3.5756114 MHz).</td></tr>
<tr><td>8</td><td>DVDD</td><td>—</td><td>Digital system ground.</td></tr>
<tr><td>9</td><td>GUIN7</td><td>I</td><td>G/U data input. (MSB).</td></tr>
<tr><td>10-15</td><td>GUIN6-GUIN1</td><td>I</td><td>G/U data input.</td></tr>
<tr><td>16</td><td>GUIN0</td><td>I</td><td>G/U data input. (LSB).</td></tr>
<tr><td>17</td><td>BVIN7</td><td>I</td><td>B/V/UV data input. (MSB).</td></tr>
<tr><td>18-23</td><td>BVIN6-BVIN1</td><td>I</td><td>B/V/UV data input.</td></tr>
<tr><td>24</td><td>BVIN0</td><td>I</td><td>B/V/UV data input. (LSB).</td></tr>
<tr><td>25</td><td>AVDD</td><td>—</td><td>Analog system ground.</td></tr>
<tr><td>26</td><td>CROUT</td><td>O</td><td>Chroma/composite video signal (analog) output. (8-bit DAC output).</td></tr>
<tr><td>27</td><td>BIAS</td><td>O</td><td>Terminal where ripple removal capacitor is connected.</td></tr>
<tr><td>28</td><td>YOUT</td><td>O</td><td>Luminance signal (analog) output. (8-bit DAC output).</td></tr>
<tr><td>29</td><td>AVSS</td><td>—</td><td>Analog system ground.</td></tr>
<tr><td>30</td><td>CCSEL</td><td>I</td><td>Output signal control (Chroma signal output: 0, Composite video signal output: 1).</td></tr>
<tr><td>31</td><td>NPSEL</td><td>I</td><td rowspan="2"><table>
<tr><th>NPSEL</th><th>PMSEL</th><th>Set signal mode</th></tr>
<tr><td>0</td><td>0</td><td>NTSC</td></tr>
<tr><td>1</td><td>0</td><td>PAL</td></tr>
<tr><td>0</td><td>1</td><td>PAL-M</td></tr>
<tr><td>1</td><td>1</td><td>——————</td></tr>
</table></td></tr>
<tr><td>32</td><td>PMSEL</td><td>I</td></tr>
<tr><td>33</td><td>CDGSEL</td><td>I</td><td>Video CD/CD-G input mode control terminal. (V-CD = 0, CD-G=1).</td></tr>
<tr><td>34</td><td>TEST</td><td>I</td><td>Test mode input. To be fixed to L normally.</td></tr>
<tr><td>35</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>Reset signal input.</td></tr>
<tr><td>36</td><td>OSBIN</td><td>I</td><td>OSD (B) signal input terminal.</td></tr>
<tr><td>37</td><td>OSGIN</td><td>I</td><td>OSD (G) signal input terminal.</td></tr>
<tr><td>38</td><td>OSRIN</td><td>I</td><td>OSD (R) signal input terminal.</td></tr>
<tr><td>39</td><td>OSBLK</td><td>I</td><td>OSD selector signal (OSD BLANK) input terminal.</td></tr>
<tr><td>40</td><td>BLANK</td><td>I</td><td>Composite blanking (H-BLANK/V-BLANK) signal input.</td></tr>
<tr><td>41</td><td>$\overline{\text{CSYNC}}$</td><td>I</td><td>CSYNC sync signal input.</td></tr>
<tr><td>42</td><td>$\overline{\text{HSYNC}}$</td><td>I</td><td>HSYNC sync signal input.</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>43</td><td>YUVSEL1</td><td>I</td><td rowspan="2"><table>
<tr><th>YUVSEL1</th><th>YUVSEL2</th><th>Input mode</th></tr>
<tr><td>0</td><td>0</td><td>RYIN=R, GUIN=G, BVIN=B</td></tr>
<tr><td>1</td><td>0</td><td>RYIN=Y, GUIN=U, BVIN=V</td></tr>
<tr><td>0</td><td>1</td><td>RYIN=Y, BVIN=UV</td></tr>
<tr><td>1</td><td>1</td><td>——————</td></tr>
</table></td></tr>
<tr><td>44</td><td>YUVSEL2</td><td>I</td></tr>
<tr><td>45</td><td>RYIN7</td><td>I</td><td>R/Y data input. (MSB).</td></tr>
<tr><td>46-48</td><td>RYIN6-RYIN4</td><td>I</td><td>R/Y data input.</td></tr>
</table>

Pin No.	Pin Name	I/O	Description
75	16M	O	16.9344 MHz crystal output pin. 33.8688 MHz is output during 4 times speed playback.
76	4.2M	O	4.2336 MHz output pin.
77	TEST5	I	Test input pin with built-in pull-down resistor.
78	$\overline{\text{CS}}$	I	Chip select input pin with built-in pull-down resistor.
79	DEFI	I	Defect detection signal input pin. This pin must be connected GND when not used.
80	VCOC	I	Vari-pitch VCO control input pin. This pin must be connected GND when not used.

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Pin No.	Pin Name	I/O	Description
1	IRQ	I	MPEG interrupt request input signal.
2	I-WRQ	I	CD WRQ input signal.
3, 4	CDGM, CDG-CS	I	Not used.
5	O-WRC	O	CD read/write control signal output.
6	PAL NTSC	O	MPEG PAL/NTSC mode selection signal output. (L = PAL).
7, 8	SLED+, SLED–	O	Sled advance signal output.
9	CD-RST	O	CD reset terminal.
10	MPFG-RST	O	MPEG reset terminal.
11	X-BUSY	I/O	Host CPU interface busy signal.
12	NC	—	Not used.
13	CE123	O	VCD/CDG mode control signal output. (H = VCD).
14	VOE	O	Video output enable signal output. (H = VCD).
15, 16	CDG CE, CDG CLK	O	Not used.
17, 18	CDG DATA, GINTI	O	
19, 20	GMUTE, GPAL	O	
21, 22	SADJ, XWCDG	I	
23	VSS	—	GND.
24	VDD	—	Power supply terminal.
25	XAMUTE	O	Analog audio mute signal output. (L = MUTE).
26-30	NC	—	Not used.
31, 32	PAL60, OSDCS	O	
33-40	AD0-AD7	I/O	MPEG data input/output.
41	CD-DATA	O	CD command data output.
42	SUBQ-IN	I	Subcode Q signal input.
43	CD-CLK	O	CD clock signal output.
44	STATUS	O	Status signal output to host CPU.
45	COMMAND	I	Command data input from host CPU.
46	CLK	I	Clock signal input from host CPU.
47	AS	O	MPEG address/serial data output.
48	STB	O	MPEG strobe signal output.
49	TEST	—	Not used.
50	RESET	—	Reset terminal.
51, 52	XT1, XT2	—	Not used.
53	VSS	—	GND.
54	CF1	I	6 MHz oscillator input terminal.
55	CF2	O	6 MHz oscillator output terminal.
56	VDD	—	Power supply terminal.
57	SWIL	I	CD pickup inner circumference limit signal input.
58	DRF-IN	I	"Detect RF" RF level detection signal input.
59	P/PA/N	I	PAL/PAL or AUTO/NTSC mode selection signal input. (H = PAL/PAL, L = AUTO/ NTSC).
60-64	NC	—	Not used.

IC, LC78011E

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1-3</td><td>RYIN3-RYIN1</td><td>I</td><td>R/Y data input.</td></tr>
<tr><td>4</td><td>RYIN0</td><td>I</td><td>R/Y data input. (LSB).</td></tr>
<tr><td>5</td><td>DVSS</td><td>—</td><td>Digital system ground.</td></tr>
<tr><td>6</td><td>CLKI</td><td>I</td><td>4 fsc clock input. (NTSC: 14.31818 MHz)
(PAL: 17.734475 MHz)
(PAL-M: 14.3024459 MHz).</td></tr>
<tr><td>7</td><td>FSCIN</td><td>I</td><td>Subcarrier clock input. (NTSC: 3.589545 MHz)
(PAL: 4.4336187 MHz)
(PAL-M: 3.5756114 MHz).</td></tr>
<tr><td>8</td><td>DVDD</td><td>—</td><td>Digital system ground.</td></tr>
<tr><td>9</td><td>GUIN7</td><td>I</td><td>G/U data input. (MSB).</td></tr>
<tr><td>10-15</td><td>GUIN6-GUIN1</td><td>I</td><td>G/U data input.</td></tr>
<tr><td>16</td><td>GUIN0</td><td>I</td><td>G/U data input. (LSB).</td></tr>
<tr><td>17</td><td>BVIN7</td><td>I</td><td>B/V/UV data input. (MSB).</td></tr>
<tr><td>18-23</td><td>BVIN6-BVIN1</td><td>I</td><td>B/V/UV data input.</td></tr>
<tr><td>24</td><td>BVIN0</td><td>I</td><td>B/V/UV data input. (LSB).</td></tr>
<tr><td>25</td><td>AVDD</td><td>—</td><td>Analog system ground.</td></tr>
<tr><td>26</td><td>CROUT</td><td>O</td><td>Chroma/composite video signal (analog) output. (8-bit DAC output).</td></tr>
<tr><td>27</td><td>BIAS</td><td>O</td><td>Terminal where ripple removal capacitor is connected.</td></tr>
<tr><td>28</td><td>YOUT</td><td>O</td><td>Luminance signal (analog) output. (8-bit DAC output).</td></tr>
<tr><td>29</td><td>AVSS</td><td>—</td><td>Analog system ground.</td></tr>
<tr><td>30</td><td>CCSEL</td><td>I</td><td>Output signal control (Chroma signal output: 0, Composite video signal output: 1).</td></tr>
<tr><td>31</td><td>NPSEL</td><td>I</td><td rowspan="2"><table>
<tr><th>NPSEL</th><th>PMSEL</th><th>Set signal mode</th></tr>
<tr><td>0</td><td>0</td><td>NTSC</td></tr>
<tr><td>1</td><td>0</td><td>PAL</td></tr>
<tr><td>0</td><td>1</td><td>PAL-M</td></tr>
<tr><td>1</td><td>1</td><td>—</td></tr>
</table></td></tr>
<tr><td>32</td><td>PMSEL</td><td>I</td></tr>
<tr><td>33</td><td>CDGSEL</td><td>I</td><td>Video CD/CD-G input mode control terminal. (V-CD = 0, CD-G=1).</td></tr>
<tr><td>34</td><td>TEST</td><td>I</td><td>Test mode input. To be fixed to L normally.</td></tr>
<tr><td>35</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>Reset signal input.</td></tr>
<tr><td>36</td><td>OSBIN</td><td>I</td><td>OSD (B) signal input terminal.</td></tr>
<tr><td>37</td><td>OSGIN</td><td>I</td><td>OSD (G) signal input terminal.</td></tr>
<tr><td>38</td><td>OSRIN</td><td>I</td><td>OSD (R) signal input terminal.</td></tr>
<tr><td>39</td><td>OSBLK</td><td>I</td><td>OSD selector signal (OSD BLANK) input terminal.</td></tr>
<tr><td>40</td><td>BLANK</td><td>I</td><td>Composite blanking (H-BLANK/V-BLANK) signal input.</td></tr>
<tr><td>41</td><td>$\overline{\text{CSYNC}}$</td><td>I</td><td>CSYNC sync signal input.</td></tr>
<tr><td>42</td><td>$\overline{\text{HSYNC}}$</td><td>I</td><td>HSYNC sync signal input.</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>43</td><td>YUVSEL1</td><td>I</td><td rowspan="2"><table>
<tr><th>YUVSEL1</th><th>YUVSEL2</th><th>Input mode</th></tr>
<tr><td>0</td><td>0</td><td>RYIN=R, GUIN=G, BVIN=B</td></tr>
<tr><td>1</td><td>0</td><td>RYIN=Y, GUIN=U, BVIN=V</td></tr>
<tr><td>0</td><td>1</td><td>RYIN=Y, BVIN=UV</td></tr>
<tr><td>1</td><td>1</td><td>—</td></tr>
</table></td></tr>
<tr><td>44</td><td>YUVSEL2</td><td>I</td></tr>
<tr><td>45</td><td>RYIN7</td><td>I</td><td>R/Y data input. (MSB).</td></tr>
<tr><td>46-48</td><td>RYIN6-RYIN4</td><td>I</td><td>R/Y data input.</td></tr>
</table>

IC, LC74201NE

Pin No.	Pin Name	I/O	Description
1	BV0 (LSB)	I/O	Video signal output (B signal, V signal).
2-4	BV1-BV3		Output: 3-state output of DVDD1 (3 V) system.
5-7	BV4-BV6	I/O	Video signal output (B signal, V signal).
8	BV7 (MSB)		Output: 3-state output of DVDD2 (5 V) system.
9	GU0 (LSB)	I/O	Video signal output (G signal, U signal).
10-12	GU1-GU3		Output: 3-state output of DVDD1 (3 V) system.
13-15	GU4-GU6	I/O	Video signal output (G signal, U signal).
16	GU7 (MSB)		Output: 3-state output of DVDD2 (5 V) system.
17	DVDD1	—	System power supply. (3 V system power supply: 3.3 ± 0.3 V).
18	FSCO	O	Sub carrier clock output. (Pixel clock divided-by-four output). 3-state output of DVDD2 (5V) system.
19	PCKO	O	Pixel clock output (NTSC: 4 fsc/PAL: 4fsc/13.5 MHz). 3-state output of DVDD1 (3V) system.
20	DVSS1	—	System power supply. (Connection to GND).
21	RY0 (LSB)	I/O	Video signal output (R signal, Y signal).
22-24	RY1-RY3		Output: 3-state output of DVDD1 (3 V) system.
25-27	RY4-RY6	I/O	Video signal output (R signal, Y signal).
28	RY7 (MSB)		Output: 3-state output of DVDD2 (5 V) system.
29	DVDD2	—	System power supply for 5V input/output terminal. (5.0 ± 0.5 V).
30	$\overline{\text{HSYNC}}$	O	Horizontal system signal output. 3-state output of DVDD2 (5 V) system.
31	$\overline{\text{CSYNC}}$	O	Composite sync signal output. 3-state output of DVDD2 (5 V) system.
32	BLANK	O	Blanking signal output. (Vertical and horizontal blanking period signal). 3-state output of DVDD2 (5 V) system.
33	DVSS2	—	System power supply for 5V input/output terminal. (Connection to GND).
34	NC	—	Not connected terminal.
35	VOE	I	Video output enable signal input. Output enable at H.
36	NC	—	Not connected terminal.
37	DVSS1	—	System power supply. (Connected to ground).
38	$\overline{\text{RESET}}$	I	System reset input.
39	DVDD1	—	System power supply. (3 V system power supply: 3.3 ±0.5 V).
40	NC	—	Not connected terminal.
41	$\overline{\text{IRQ}}$	O	Interrupt request signal output. (N-ch open drain output).
42	NC	—	Not connected terminal.
43	AS/DS (CE)	I	During parallel mode: Selection between address and data input. (Address at L). During serial mode: Serial transfer enable signal input. (Enable at H).
44	STB (CL)	I	During parallel mode: Address and data input/output. Strobe signal input. During serial mode: Serial transfer clock signal input.
45	AD0 (DO)	I/O	During parallel mode: Address and data input/output port P0 (LSB). During serial mode: Serial data output. (LSB first input).
46	AD1 (DI)	I/O	During parallel mode: Address and data input/output port P1. During serial mode: Serial data input. (LSB first output).

Pin No.	Pin Name	I/O	Description
47-51	AD2-AD6	I/O	Address/data input/output port during parallel interface mode. The interface mode is set when releasing the system reset . Mode is set by the 3-bit setup of AD3, AD4 and AD5. ① Serial interface: AD5: AD4: AD3 = 1: *: *. * = Don't care. ② Parallel interface: AD5: AD4: AD3 = 0: 1: 0. AD7: Address/data input/output port P7 during parallel mode. (MSB). AD0 to AD7 output have the N-ch open drain output circuit.
52	AD7 (MSB)	I/O	
53	NC	—	Not connected terminal.
54	DVSS1	—	System power supply. (Connected to ground).
55	XPALIN	I	PAL 4fsc crystal oscillator connection terminal. (4fsc = 17.734475 MHz)
56	XPALOUT	O	
57	NC	—	Not connected terminal.
58	XNTIN	I	NTSC 4fsc crystal oscillator connection terminal. (4fsc = 14.31318 MHz)
59	XNTOUT	O	
60	DVDD1	—	System power supply. (3 V system power supply: 3.3 ±0.5 V).
61	CLKSEL	I	Input to control selection between 54.0 MHz clock input (CLKIN: pin-62) and internal VCO oscillator clock. (CLKIN input mode at H).
62	CLKIN	I	54.0 MHz clock input (equipped with internal bias) Perform the terminal processing (DVDD1 or DVSST) when not used.
63	VCOR	—	Terminal where external resistor for VCO oscillator circuit adjustment is connected.
64	NC	—	Not connected terminal.
65	AVSS	—	System power supply for VCO and PLL block. (Connected to ground).
66	PLLFIL	—	Terminal where external PLL loop filter is connected.
67	AVDD	—	System power supply for VCO and PLL block. (3 V system power supply: 3.3 ±0.5 V).
68	CDCK	I	CD-DSP clock input (16.9344 MHz/2.8224 MHz/ 2.1168 MHz).
69	DVSS1	—	System power supply. (Connected to ground).
70	CDEMPH	I	Emphasis input.
71	CDC2P	I	C2 error flag input.
72	CDSD	I	Serial data input.
73	CDBCK	I	Serial data bit clock input.
74	CDLRCK	I	Left/Right clock input.
75	DVDD1	—	System power supply. (3 V system power supply: 3.3 ±0.5 V).
76	DVSS1	—	System power supply. (Connected to ground).
77	AULRCK	O	Audio data Left/Right clock output. (N-ch open drain output).
78	AUEMPH	O	Audio emphasis flat output. (N-ch open drain output).
79	AUDOUT	O	Audio data serial output. (N-ch open drain output).
80	AUBCO	O	Audio data bit clock output. (N-ch open drain output).
81	DVDD1	—	System power supply. (3 V system power supply: 3.3 ±0.5 V).
82-86	NC	—	Not connected terminal.
87	DD15 (MSB)	I/O	Data input/output to DRAM. 3-state output of DVDD2 (5 V) system.
88-96	DD14-DD6		

Pin No.	Pin Name	I/O	Description
97, 98	NC	—	Not connected terminal.
99-103	DD5-DD1	I/O	Data input/output to DRAM. Output: 3-state output of the DVDD2 (5V) system
104	DD0 (LSB)		
105	DVSS1	—	System power supply. (Connected to GND).
106	$\overline{\text{RAS1}}$	O	Raw address strobe signal output to expansion 1M-DRAM. 3-state output of the DVDD2 (5V) system.
107	$\overline{\text{RAS0}}$	O	Raw address strobe signal output to 4M-DRAM. 3-state output of the DVDD2 (5V) system.
108	NC	—	Not connected terminal.
109	$\overline{\text{WE}}$	O	Write enable signal output to DRAM. 3-state output of the DVDD2 (5V) system.
110	NC	—	Not connected terminal.
111	$\overline{\text{CAS}}$	O	Column address strobe signal output to DRAM. 3-state output of the DVDD2 (5V) system.
112	DVSS2	—	System power supply for 5V input/output terminal. (Connection to GND).
113	$\overline{\text{OE}}$	O	Output enable signal output to DRAM. 3-state output of the DVDD2 (5V) system.
114	DVDD2	—	System power supply for 5V input/output terminal. (5.0 ± 0.5 V).
115	AA8 (MSB)	O	Address output to DRAM. Output: 3-state output of DVDD2 (5 V) system.
116-122	AA7-AA1		
123	AA0 (LSB)		
124	DVDD1	—	System power supply. (3 V system power supply: 3.3 ± 0.5 V).
125	CLKO	O	VCO, PLL block clock output during test.
126	NC	—	Not connected terminal.
127	TEST	I	Test mode operation control terminal. (Normally fixed to L).
128	NC	—	Not connected terminal.

TEST MODE

1. CD テストモードの起動方法
   ファンクション CD の釦を押しながら、AC プラグを挿入する。
   上記により FL 表示管が全て点灯し、テストモードが起動します。

2. CD テストモードの解除方法
   下記のいずれか 1 つの操作で解除します。
   - ファンクション釦を押す（CD ファンクション釦以外）
   - パワー SW 釦を押す。
   - AC プラグを抜く。

3. CD テストモードの機能説明
   テストモード起動後、各操作釦を押す事により次の No1 ～ No5 の各モード機能が使用できます。

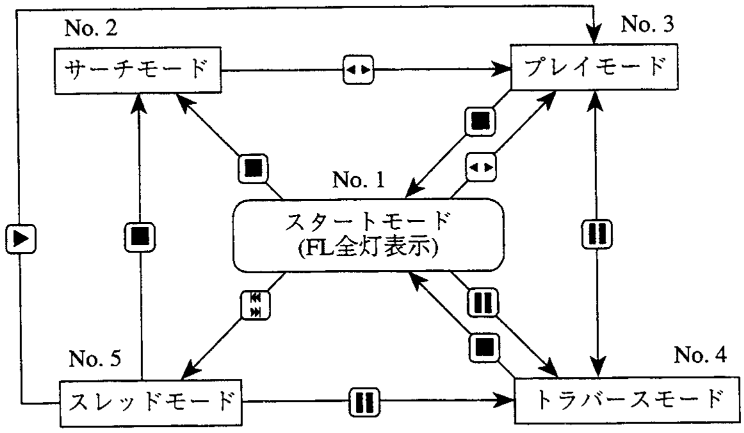
Mode/No.	操作	FL 表示	動作	内容
スタートモード No.1	起動	全灯表示	・TEST MODE 起動 ・CD ブロック電源 ON	・FL 表示確認 (全灯)
サーチモード No.2	■ 釦	CD--	・LASER DIODE 常時発光 ・連続フォーカスサーチ (PU レンズがフルスイングを繰り返す) ＊ 10 分以上の連続フォーカスは避けて下さい。 ＊注 1	・APC 回路確認 ・レーザー電流測定 (レーザー電流コントロール、トランジスタのエミッター GND 間の抵抗の両端。) FOCUS SERVO ・フォーカスラッチ波形確認 ・フォーカスエラー波形確認 (サーチモードでは FOK/FZC は監視せず。)
プレイモード No.3	◀ ▶ 釦	CD 1	・通常再生 ・TOC READ 出来ない場合 フォーカスサーチを続行 ＊注 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO DRF 確認
トラバースモード No.4	❚❚ 釦	CD 1	・DISC 通常再生中 1 回押す トラッキングサーボ OFF 2 回押す トラッキングサーボ ON ＊注 2	TRACKING SERVO ON/OFF トラッキングバランス (トラバース)確認
スレッドモード No.5	⏮ 釦 ⏭	全灯表示	・ピックアップ外周へ移動 ・ピックアップ内周へ移動 ＊注 3 (再生中は通常動作致します)	SLED SERVO SLED メカ動作確認

＊注 1　フォーカスサーチを連続して 10 分以上動作し続けるとドライバー IC が発熱し保護回路が働く為、トラッキングサーボがかからない状態となる場合が有ります。この様な場合には、電源を切り約 10 分間放熱後、再スタートして下さい。

＊注 2　『❚❚』状態で、『⏮』または『⏭』釦を押さない事。『❚❚』状態解除後、再生出来なくなります。『❚❚』状態で、『⏮』または『⏭』釦を押した場合には『■』釦を押しスタートモード(No.1)に戻して下さい。

＊注 3　ピックアップが最内周、最外周の位置でも『⏮』または『⏭』釦を押している間はスレッドモータが回転する為、ギヤ破損に注意して下さい。

4. 操作概要
   下図の様にスタートモードから、矢印方向の流れで各モードの操作が行えます。モード変更は、下図の流れに従い行って下さい。



尚、DISC DIRECT PLAY 釦を押した場合には、上図の PLAY 釦を押した時と同様の動作となります。またプレイモード／トラバースモード時に open/close 釦により、トレイを open させた場合には、スタートモードに戻ります。

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

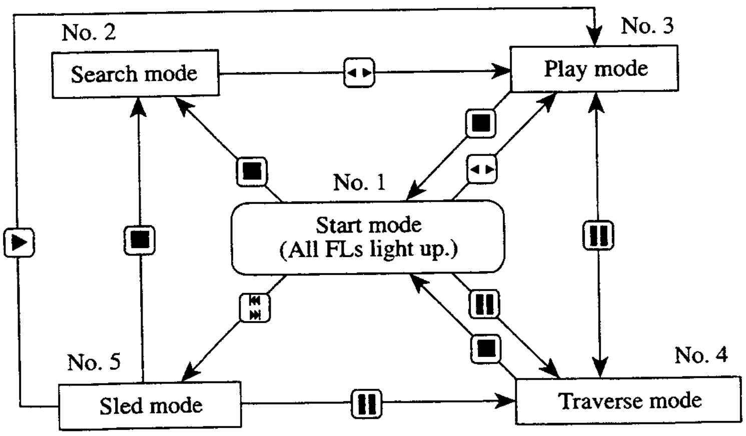
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀ ▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

USE MODEL LIST

CX-NAVF77
CX-NAVF9
CX-NAVF99
CX-NF15
CX-NF9
CX-NF98
CX-NF99
CX-SZ9500
CX-SZR400
CX-SZR800
CX-ZKR800
CX-ZKR900
CX-ZR300
CX-ZR325
CX-ZR330
CX-ZR400
CX-ZR490
CX-ZR500
CX-ZR525
CX-ZR600
CX-ZR700
CX-ZR710
CX-ZR800
CX-ZVR660
CX-ZVR700
CX-ZVR950
DX-K9900M
DX-Z9450M
GE-SZ9500
GE-Z9500
XC-K5M

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G—　—	
G—　—	
G—　—	

アイワ株式会社
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Printed in Singapore

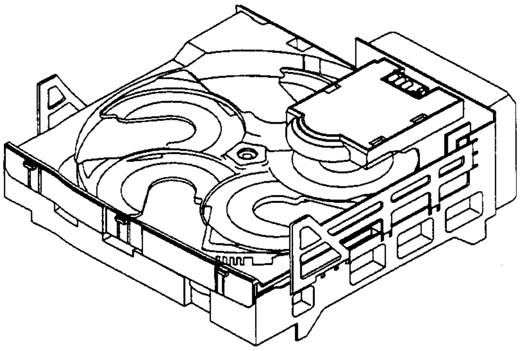
aiwa

V21772

aiwa SERVICE

6ZG-1S
6ZG-1S2
6ZG-1S3

SERVICE MANUAL



CD MECHANISM

- BASIC CD MECHANISM: 3ZG-2 E2
- TYPE: English

BASIC NAME	DERIVATION NAME					
6ZG-1S	D	SH				
6ZG-1S2	D	SH				
6ZG-1S3	D	SH				

■ This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.

S/M Code No. 09-984-249-90T

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6ZG-1S

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6ZG-1S3

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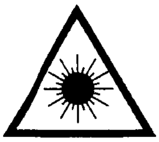
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- ■ Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- ■ Advarsel: Usynling laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

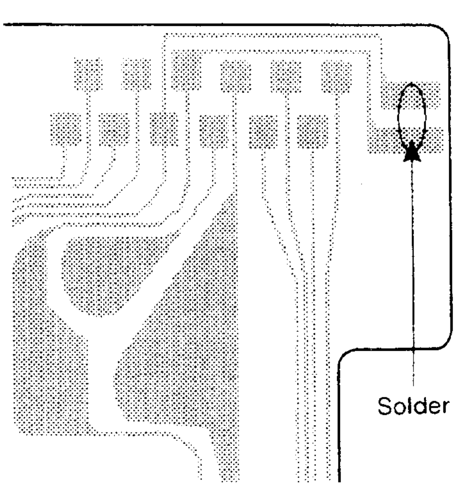
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block (KSS-213F)

> Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 6ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 6ZG-1 DSH

SUFFIX
(DERIVATION NAME)

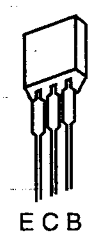
BASIC NAME: 6ZG-1S (SONY IC HIGH END MODEL)
6ZG-1S2 (The 2nd SONY IC MODEL)
6ZG-1S3 (The 3rd SONY IC MODEL)

BASIC NAME	DERIVATION NAME					
6ZG-1S	D	SH	—	—	—	—
6ZG-1S2	D	SH	—	—	—	—
6ZG-1S3	D	SH	—	—	—	—

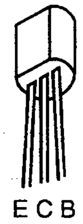
DERIVATION NAME

D: Digital output function
SH: Pick up equipped with shutter

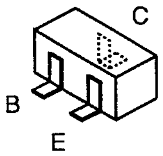
TRANSISTOR ILLUSTRATION



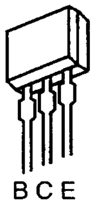
2SA933S
DTC114ES



2SA1015
2SC2001
2SD2172
2SD655



2SA1235
2SC2412
2SC2712
DTA114EK
DTC114EK
DTC114TK
DTC123JK
DTC143TK



2SB1329

DISASSEMBLY INSTRUCTIONS

1. How to replace PICK UP.

1) Open the TRAY.
   Push the stopper to arrow direction and release half of the SHAFT SLED.
2) Turn GEAR MAIN CAM to the counterclockwise (arrow "a") direction, and lift up CD mechanism. (Fig-1)
3) Remove SHAFT SLED.
4) CD mechanism in down position, replace PICK UP.
5) Lift up CD mechanism (Fig-1), and Reassemble the SHAFT SLED.

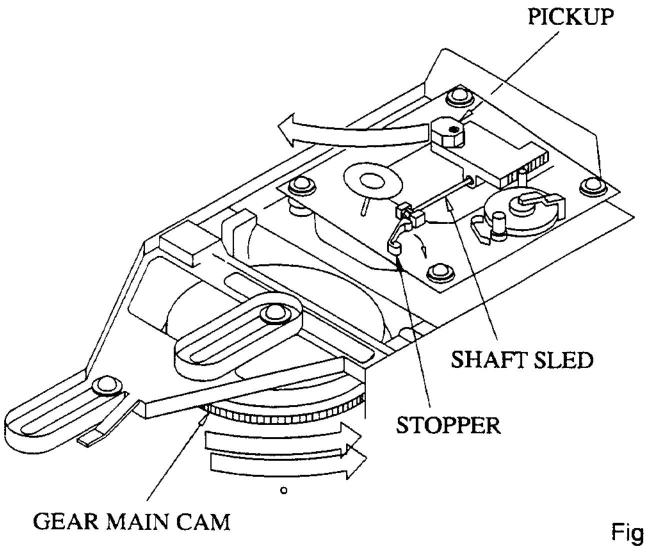

PICKUP
SHAFT SLED
STOPPER
GEAR MAIN CAM

Fig-1

2. How to remove the 5CD CHANGER BLOCK (Fig-2)

1) Remove the two FFC of the CD circuit board, and remove the five SCREWS.
2) Lift 5 CD CHANGER BLOCK from behind, and remove it. (5CD CHANGER BLOCK can be removed even if PANEL TRAY is not removed.)

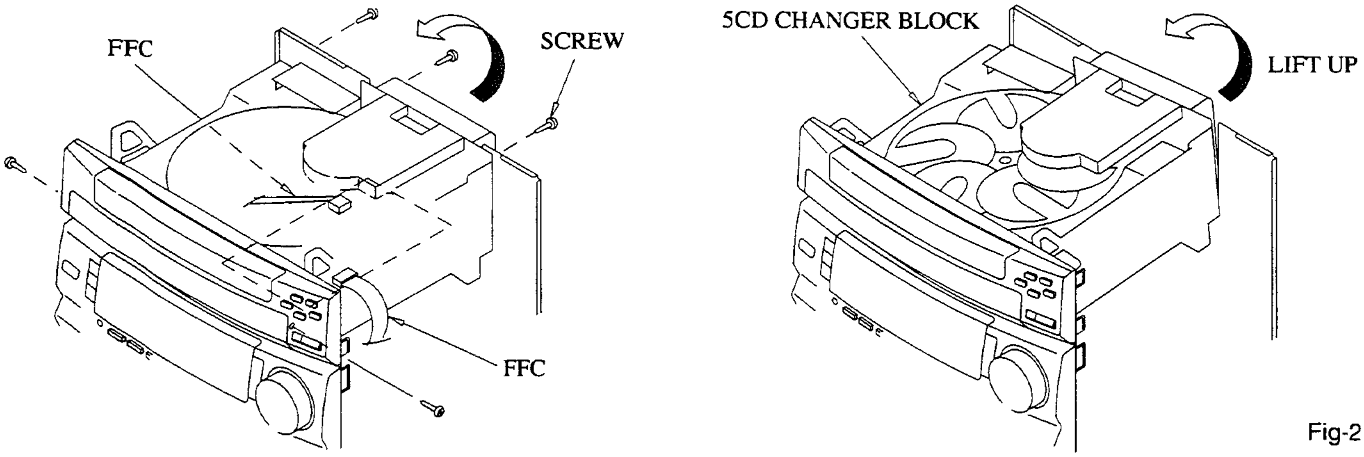

FFC
SCREW
FFC
5CD CHANGER BLOCK
LIFT UP

Fig-2

3. The disassemble and reassemble the TRAY

3-1. Disassembling procedure.

1) Push the PLATE GEAR'S Boss at the bottom part of CHAS MECHA strongly to the outside (arrow "b" direction). (Fig-3)
   (Confirm that TRAY appears a little in the front.)
2) Draw TRAY to the open position.
3) Remove FFC, and push the two LEVERS at both side of the CHAS MECH to remove TRAY. (Fig-4)

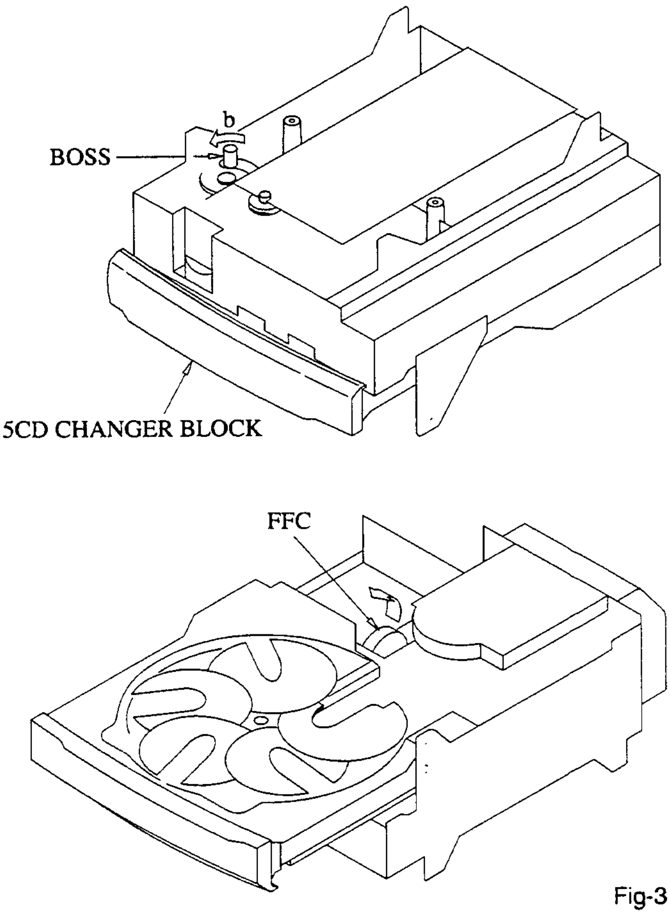


Fig-3

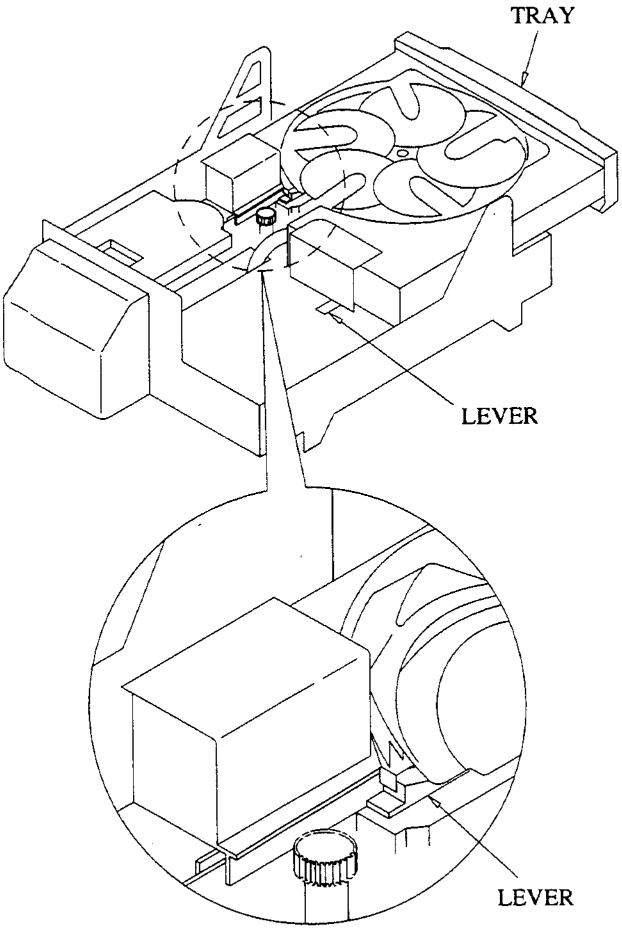


Fig-4

3-2. Reassembling procedure.

1) Confirm that LEVER TRAY is at the most right position and check for the CD Mechanism to be in the down position. (Fig-5)
2) Push in the TRAY along the rail of the CHAS MECHA.
3) After TRAY is half closed and FFC is put in, it can enter by force until the end of TRAY closed. (Fig-6)

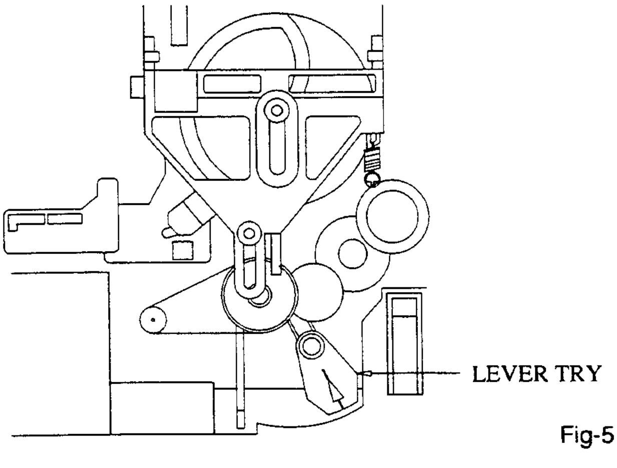


Fig-5

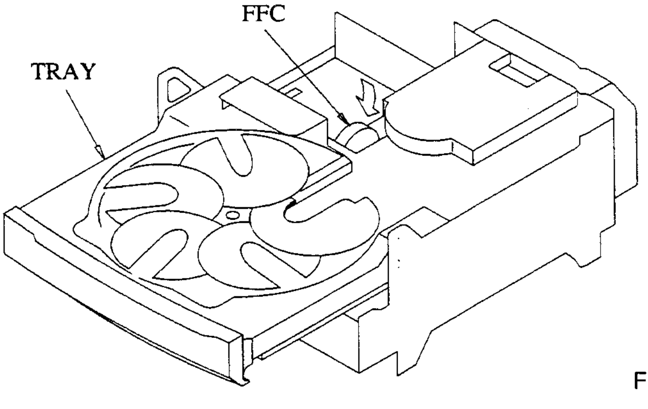


Fig-6

4. How to reassemble the TURN TABLE. (Fig-7)

1) Push LEVER TT in the direction of "C", and put in the TURN TABLE 5CD. (Fig-7)
   After reassembly, one of the TURN TABLE DISC TRAY (can be either one of the five disc trays) must be aligned with TURN TABLE 5CD. (Fig-8)
   That is, having no gap difference between the TURN TABLE 5CD and the TRAY 5CD.

* When reassembling the TURN TABLE 5CD, it is acceptable facing any CD number (1-5).

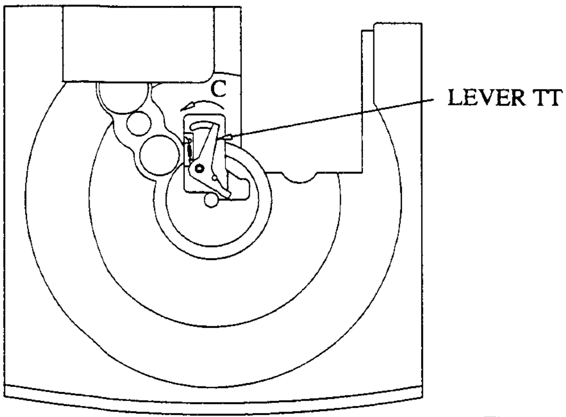


Fig-7

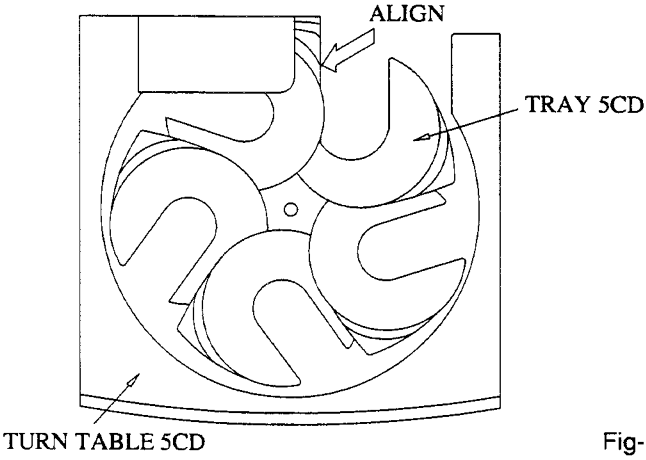


Fig-8

MODEL NO. 6ZG-1S

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-546-010		C-IC,CXD2589Q
	87-A20-592-040		C-IC,M51943 AML
	87-070-305-010		IC,BA6897S
	87-001-982-010		IC,TA7291S
TRANSISTOR			
	89-406-555-080		TR,2SD655 (0.5W)
	87-026-463-080		TR,2SA933S (0.3W)
	89-421-722-380		TR,2SD2172V/W
	89-320-011-080		TR,2SC2001 (15W)
	87-026-223-080		TR,DTC143TK
	89-110-155-080		TR,2SA1015(0.4W)
	87-026-608-080		C-TR,DTC 123 JK
	89-327-125-080		CHIP TR,2SC2712GR<D>
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
CD MAIN C.B			
C1	87-010-196-020		C-CAP,S 0.1-25 F
C2	87-010-260-080		CAP, ELECT 47-25V
C4	87-010-197-020		C-CAP,S 0.01-25 B
C101	87-010-263-040		CAP,E 100-10
C102	87-010-178-020		C-CAP,S 1000P-50 B
C103	87-010-550-040		CAP,E 100-6.3 GAS
C104	87-010-182-020		C-CAP,S 2200P-50 B
C105	87-010-198-020		C-CAP,S 0.022-25 B
C106	87-016-081-020		C-CAP,S 0.1-16 RK
C107	87-016-081-020		C-CAP,S 0.1-16 RK
C108	87-016-081-020		C-CAP,S 0.1-16 RK
C109	87-010-497-040		CAP,E 4.7-35 GAS
C110	87-010-198-080		CAP, CHIP 0.022
C111	87-010-197-020		C-CAP,S 0.01-25 B
C112	87-010-402-040		CAP,E 2.2-50 SME
C113	87-010-382-040		CAP,E 22-25 SME
C114	87-010-213-020		C-CAP,S 0.015-25 B
C115	87-010-263-040		CAP,E 100-10
C116	87-010-197-020		C-CAP,S 0.01-25 B
C117	87-016-369-020		C-CAP,S 0.033-25 B K
C118	87-010-197-020		C-CAP,S 0.01-25 B
C119	87-016-369-020		C-CAP,S 0.033-25 B K
C120	87-010-197-020		C-CAP,S 0.01-25 B
C121	87-010-494-040		CAP,E 1-50 GAS
C122	87-010-154-020		C-CAP,S 10P-50 CH
C123	87-010-154-020		C-CAP,S 10P-50 CH
C124	87-010-154-020		C-CAP,S 10P-50 CH
C125	87-010-596-020		C-CAP,S 0.047-16 RK
C126	87-010-596-020		C-CAP,S 0.047-16 RK
C127	87-012-140-020		C-CAP,S 470P-50 CH
C128	87-010-596-020		C-CAP,S 0.047-16 RK
C129	87-010-198-020		C-CAP,S 0.022-25 B
C130	87-016-081-020		C-CAP,S 0.1-16 RK
C131	87-010-550-040		CAP,E 100-6.3 GAS
C132	87-010-550-040		CAP,E 100-6.3 GAS
C133	87-012-158-020		C-CAP,S 390P-50 J CH
C150	87-010-145-020		C-CAP,S 1P-50 C CH
C202	87-010-596-020		C-CAP,S 0.047-16 RK
C203	87-010-188-020		C-CAP,S 6800P-50 B
C204	87-012-156-020		C-CAP,S 220P-50 CH
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16
C206	87-010-400-040		CAP,E 0.47-50
C207	87-010-197-020		C-CAP,S 0.01-25 B
C208	87-010-318-020		C-CAP,S 47P-50 CH<D>
C209	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C210	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020		C-CAP,S 680P-50 J SL
C212	87-010-176-020		C-CAP,S 680P-50 J SL
C213	87-010-382-040		CAP,E 22-25 SME<D>
C213	87-010-401-040		CAP,E 1-50 SME
C214	87-010-382-040		CAP,E 22-25 SME<D>
C214	87-010-401-040		CAP,E 1-50 SME
C215	87-010-318-020		C-CAP,S 47P-50 CH
C216	87-010-318-020		C-CAP,S 47P-50 CH
C217	87-010-380-040		CAP,E 47-16 SME
C218	87-010-197-020		C-CAP,S 0.01-25 B
C219	87-010-196-020		C-CAP,S 0.1-25 F
C220	87-010-370-040		CAP,E 330-6.3 SME
C221	87-010-197-020		C-CAP,S 0.01-25 B
C222	87-010-186-020		C-CAP,S 4700P-50 B
C223	87-016-081-020		C-CAP,S 0.1-16 RK
C228	87-018-209-080		CAP, CER 0.1-50V
C230	87-016-081-020		C-CAP,S 0.1-16 RK
C231	87-018-209-080		CAP, CER 0.1-50V
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-403-040		CAP,E 3.3-50 SME
C501	87-016-459-040		CAP,E 470-10 SMG
C502	87-010-197-020		C-CAP,S 0.01-25 B
C503	87-010-263-040		CAP,E 100-10
C504	87-010-196-020		C-CAP,S 0.1-25 F
C505	87-010-196-020		C-CAP,S 0.1-25 F
C506	87-010-196-020		C-CAP,S 0.1-25 F
C507	87-010-196-020		C-CAP,S 0.1-25 F
C508	87-016-459-040		CAP,E 470-10 SMG
C509	87-010-196-020		C-CAP,S 0.1-25 F
C510	87-010-196-020		C-CAP,S 0.1-25 F
C601	87-010-197-020		C-CAP,S 0.01-25 B
C602	87-016-251-040		CAP,E 220-16 SMG
C603	87-010-196-020		C-CAP,S 0.1-25 F
C701	87-010-322-020		C-CAP,S 100P-50 CH
C702	87-010-318-020		C-CAP,S 47P-50 CH
C703	87-010-318-020		C-CAP,S 47P-50 CH
C705	87-010-178-020		C-CAP,S 1000P-50 B
C706	87-018-199-080		CAP, CER 3300P
C901	87-010-260-040		CAP,E 47-25 SME<D>
C902	87-010-196-020		C-CAP,S 0.1-25 F<D>
CN3	86-ZG1-609-010		CONN ASSY,6P
FB1	87-003-223-080		FERRITE BEAD BL02RN2
FB2	87-003-223-080		FERRITE BEAD BL02RN2
FB3	87-003-223-080		FERRITE BEAD BL02RN2
FC1	86-ZG1-605-010		CABLE,FFC 16P
FC2	86-ZG1-608-010		CABLE,FFC 8P
L28	83-XM1-617-080		C-COIL,BK2125HM601
L41	83-XM1-617-080		C-COIL,BK2125HM601
L101	87-003-102-080		COIL, 10UH
L201	87-003-102-080		COIL, 10UH
LED901	87-A40-123-010		LED,SLZ-8128A-01-B<D>
M601	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
⚠PR1	87-026-689-080		PROTECTOR,1A 60V 491
R101	87-022-363-020		C-RES,S 68K-1/10W F
R102	87-022-363-020		C-RES,S 68K-1/10W F
R103	87-022-363-020		C-RES,S 68K-1/10W F
R104	87-022-363-020		C-RES,S 68K-1/10W F
R105	87-022-365-020		C-RES,S 100K-1/10W F
R106	87-022-365-020		C-RES,S 100K-1/10W F
R420	87-029-060-080		RES,FUSE 33-1/4 W
S601	87-036-109-010		PUSH SWITCH
S602	87-036-109-010		PUSH SWITCH
S603	87-036-109-010		PUSH SWITCH
X201	87-A70-046-010		VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED703	87-017-733-080		LED,SEL1250SM

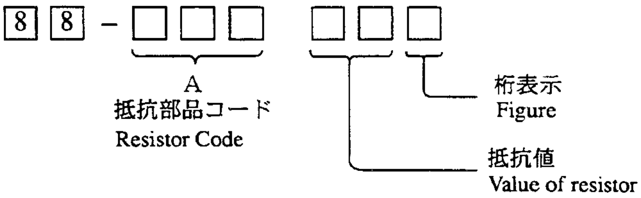
T-T C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-080		CAP TC U 0.1-50F
LED411	87-070-288-010		LED,GL380
M401	87-A90-036-010		MOT ASSY,RF-300CA-11
PS401	87-A90-156-010		SNSR,SG-240
Q411	87-A30-031-010		P-TR,PT380F
S401	87-036-109-010		PUSH SWITCH

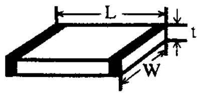
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

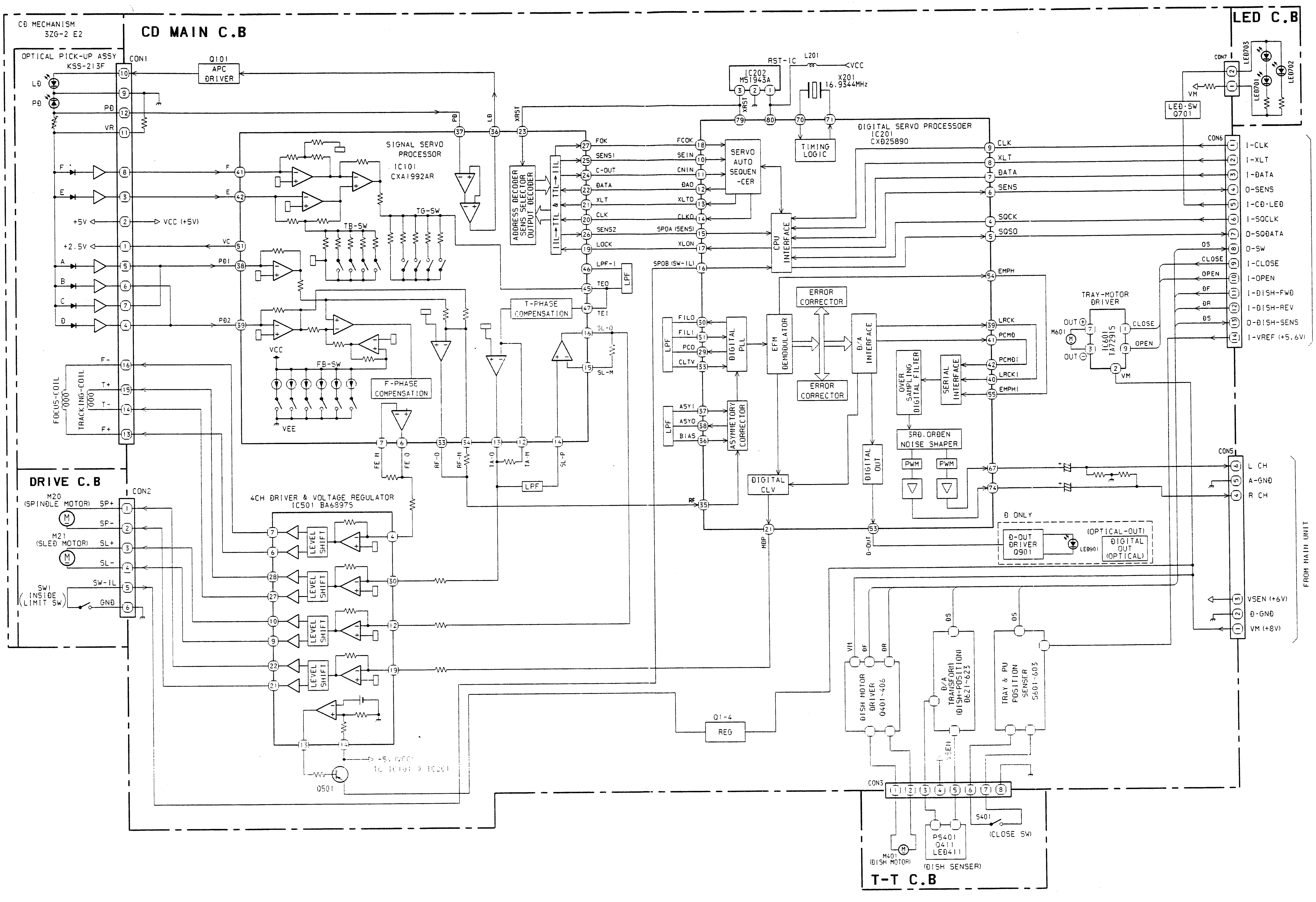
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



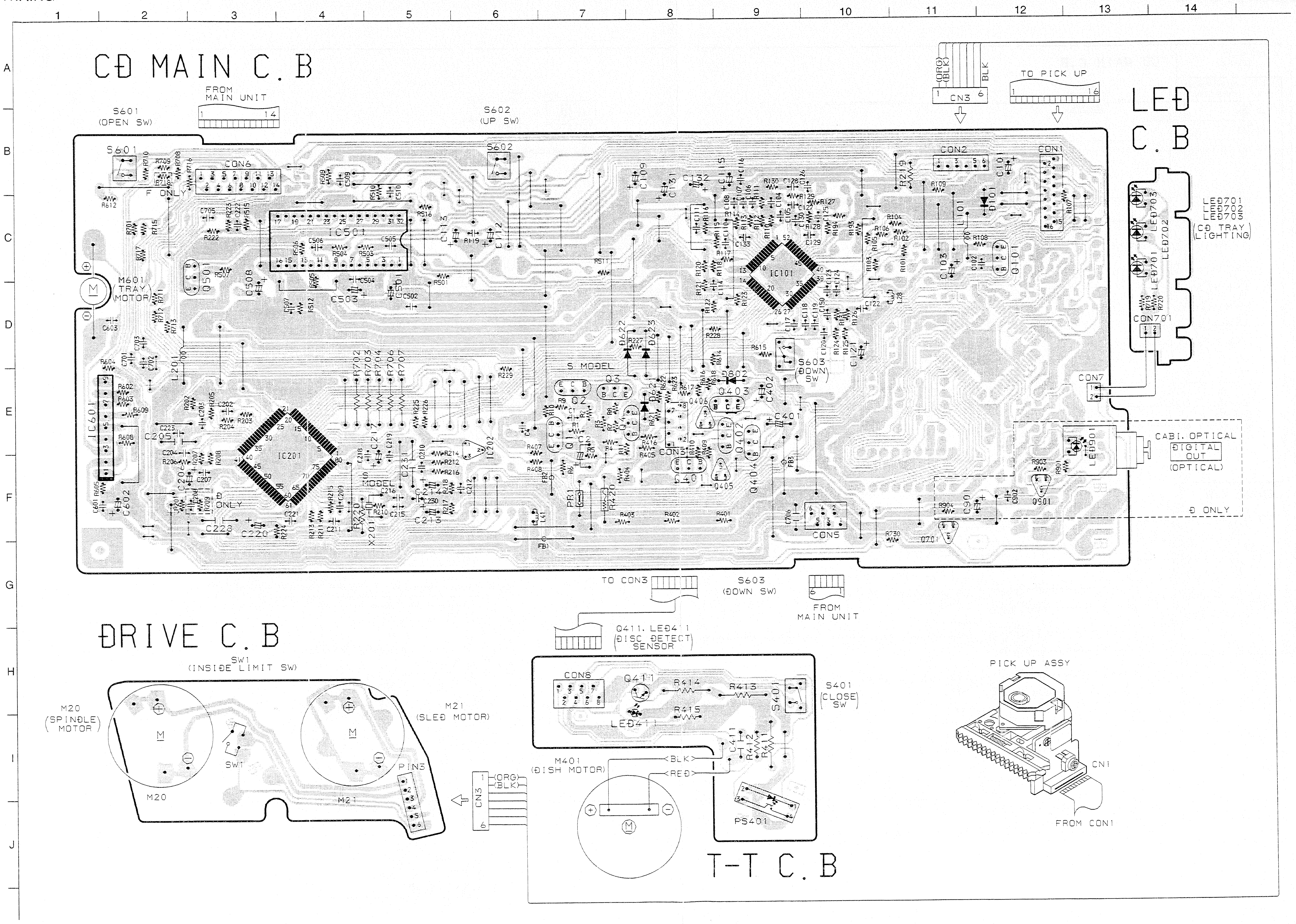
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ	 	1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

BLOCK DIAGRAM


CD MECHANISM
3ZG-2 E2
CD MAIN C.B
OPTICAL PICK-UP ASSY
KSS-213F
CON1
LD
PD
VR
+5V
VCC (+5V)
+2.5V
FOCUS-COIL
TRACKING-COIL
F+
F-
T+
T-
Q101
APC DRIVER
SIGNAL SERVO PROCESSOR
IC101
CXA1992AR
TB-SW
TG-SW
FB-SW
F-PHASE COMPENSATION
T-PHASE COMPENSATION
VCC
VEE
FE H
FE O
RF-O
RF-H
TA-O
TA-M
SL-P
SL-O
SL-M
LPF
TEO
TEI
LPF-I
PD1
PD2
VC
ADDRESS DECODER
SENS SELECTOR
OUTPUT DECODER
IIL→TTL & TTL→IIL
FOK
SENS1
C-OUT
DATA
XLT
CLK
SENS2
LOCK
XRST
RST-IC
IC202
M51943A
L201
VCC
X201
16.9344MHz
DIGITAL SERVO PROCESSOER
IC201
CXD25890
TIMING LOGIC
SERVO AUTO SEQUEN -CER
CPU INTERFACE
FCOK
SEIN
CNIN
DAO
XLTO
CLKO
SPOA (SENS)
XLON
SPOB (SW-IL)
FILO
FILI
PCO
CLTV
DIGITAL PLL
ASYI
ASYO
BIAS
ASYMMETORY CORRECTOR
EFM DEMODULATOR
ERROR CORRECTOR
D/A INTERFACE
DIGITAL CLV
DIGITAL OUT
MDP
D-OUT
RF
OVER SAMPLING DIGITAL FILTER
SERIAL INTERFACE
SRD.ORDEN NOISE SHAPER
PWM
LRCK
PCMD
PCMDI
LRCKI
EMPHI
EMPH
SOCK
SOSO
D ONLY
(OPTICAL-OUT)
D-OUT DRIVER
Q901
LED901
DIGITAL OUT (OPTICAL)
TRAY-MOTOR DRIVER
IC601
TA7291S
M601
OUT⊕
OUT⊖
CLOSE
OPEN
VM
LED C.B
CON7
LED-SW
Q701
LED701
LED702
LED703
CON6
I-CLK
I-XLT
I-DATA
O-SENS
I-CD-LED
I-SOCLK
O-SODATA
O-SW
I-CLOSE
I-OPEN
I-DISH-FWD
I-DISH-REV
O-DISH-SENS
I-VREF (+5.6V)
DS
DF
DR
FROM MAIN UNIT
CON5
L CH
A-GND
R CH
VSEN (+6V)
D-GND
VM (+8V)
DRIVE C.B
CON2
M20
(SPINDLE MOTOR)
SP+
SP-
M21
(SLED MOTOR)
SL+
SL-
SW1
(INSIDE LIMIT SW)
SW-IL
GND
4CH DRIVER & VOLTAGE REGULATOR
IC501 BA6897S
LEVEL SHIFT
Q501
+5V (DD)
TO IC101 & IC201
Q1-4
REG
DISH MOTOR DRIVER
Q401~406
VM
D/A TRANSFORM (DISH-POSITION)
Q621~623
VSEN
TRAY & PU POSITION SENSER
S601~603
CON3
T-T C.B
M401
(DISH MOTOR)
PS401
Q411
LED411
(DISH SENSER)
S401
(CLOSE SW)

WIRING


1
2
3
4
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6
7
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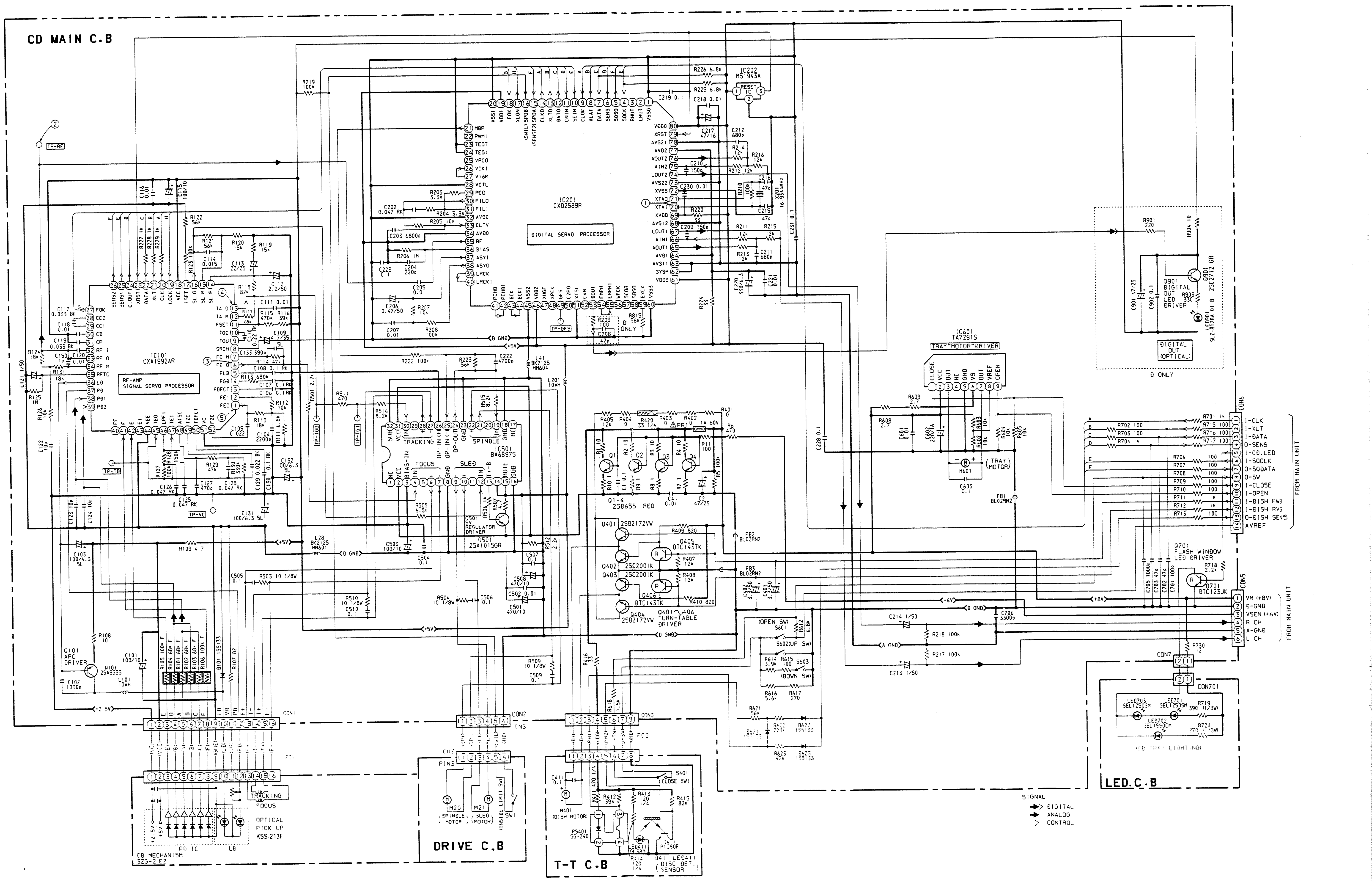
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
CD MAIN C.B
FROM MAIN UNIT
S601 (OPEN SW)
S602 (UP SW)
CN3
(ORG)
(BLK)
BLK
TO PICK UP
LED C.B
LED701
LED702
LED703
(CD TRAY LIGHTING)
CON6
CON1
CON2
CON7
CON701
IC501
IC101
IC201
IC601
IC202
M601 TRAY MOTOR
S603 (DOWN SW)
S MODEL
F ONLY
D ONLY
MODEL
CABI. OPTICAL
DIGITAL OUT
(OPTICAL)
LED901
Q901
CON5
CON3
TO CON3
S603 (DOWN SW)
FROM MAIN UNIT
Q411. LED411 (DISC DETECT SENSOR)
DRIVE C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
M20
M21
SW1
PIN3
CN3
(ORG)
(BLK)
M401 (DISH MOTOR)
<BLK>
<RED>
CON5
Q411
R414
R413
R415
LED411
S401
S401 (CLOSE SW)
C411
R412
R411
PS401
T-T C.B
PICK UP ASSY
CN1
FROM CON1

SCHEMATIC DIAGRAM


CD MAIN C.B
IC101
CXA1992AR
RF-AMP
SIGNAL SERVO PROCESSOR
IC201
CXD2589R
DIGITAL SERVO PROCESSOR
IC202
M51943A
RESET IC
X201
16.9344MHz
IC501
BA6897S
TRACKING
SPINDLE
FOCUS
SLED
IC601
TA7291S
TRAY MOTOR DRIVER
M601
TRAY MOTOR
Q501
2SA1015GR
5V REGULATOR DRIVER
Q1-4
2SD655 REG
Q401 2SD2172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SD2172VW
Q405 DTC143TK
Q406 DTC143TK
Q401~406
TURN-TABLE DRIVER
Q101
APC DRIVER
2SA9335
Q901
DIGITAL OUT LED DRIVER
2SC2712 GR
LE0901
SLZ-8128A-01-B
DIGITAL OUT (OPTICAL)
D ONLY
Q701
FLASH WINDOW LED DRIVER
DTC125JK
CON1
CON2
CN3
CON5
CON6
CON7
CON701
I-CLK
I-XLT
I-DATA
O-SENS
I-CD.LED
I-SQCLK
O-SQDATA
O-SW
I-CLOSE
I-OPEN
I-DISH FWD
I-DISH RVS
O-DISH SENS
AVREF
FROM MAIN UNIT
VM (+8V)
D-GND
VSEN (+6V)
R CH
A-GND
L CH
FROM MAIN UNIT
S601 (OPEN SW)
S602 (UP SW)
S603 (DOWN SW)
TP-RF
TP-TE
TP-VC
TP-GFS
TP-FOD
TP-IGI
PD IC
LD
TRACKING
FOCUS
OPTICAL PICK UP
KSS-213F
CD MECHANISM
3ZG-2 E2
DRIVE C.B
M20 SPINDLE MOTOR
M21 SLED MOTOR
SW1 (INSIDE LIMIT SW)
T-T C.B
M401 (DISH MOTOR)
PS401 SG-240
S401 (CLOSE SW)
Q411 LE0411 DISC DET. SENSOR
PT380F
LED.C.B
LE0701 SEL1250SM
LE0702 SEL1550CM
LE0703 SEL1250SM
(CD TRAY LIGHTING)
SIGNAL
DIGITAL
ANALOG
CONTROL

IC DESCRIPTION
IC, CXA1992AR

Pin No.	Pin Name	I/O	Description
1	FEO	O	Output terminal for focus error amplifier. Internally connected to window comparator input for bias condition.
2	FEI	I	Input terminal for focus error.
3	FDFCT	I	Capacitor connection terminal for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FE_O	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TA_M	I	Tracking amplifier inverted input pin.
13	TA_O	O	Tracking drive output.
14	SL_P	I	Sled amplifier non-inverted input pin.
15	SL_M	I	Sled amplifier inverted input pin.
16	SL_O	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input with external resistance connected.
18	Vcc	I	Power supply.
19	LOCK	I	"L" setting starts sled disorder-prevention circuit. (Not pull-up resistance)
20	CLK	I	Clock input for serial data transfer from CPU. (No pull-up resistance)
21	XLT	I	Latch input from CPU. (No pull-up resistance)
22	DATA	I	Serial data input from CPU. (No pull-up resistance)
23	XRST	I	Reset system at "L" setting. (No pull-up resistance)
24	C_OUT	O	Signal output for track number counting.
25	SENS1	O	FZC, DFCT1, TZC, BALH, TGH, FOH, or ATSC is output depending on the command from CPU.
26	SENS2	O	DFCT2, MIRR, BALL, TGL or FOL is output depending on the command from CPU.
27	FOK	O	Output terminal for focus OK comparator.
28	CC2	I	Input pin where the DEFECT bottom hold output is capacitance coupled.
29	CC1	O	DEFECT bottom-hold output terminal. Internally connected to interruption comparator input.
30	CB	I	Connection terminal for DEFECT bottom-hold capacitor.
31	CP	I	Connection terminal for MIRR hold-capacitor. Anti-reverse input terminal for MIRR comparator.

Pin No.	Pin Name	I/O	Description
32	RF_I	I	Input terminal by capacity combination of RF summing amplifier.
33	RF_O	O	Output terminal of RF summing amplifier. Checkpoint of Eye pattern.
34	RF_M	I	Anti-reverse input terminal for RF summing amplifier. The gain of RF amplifier is decided by the connection resistance between RF_M and RFO terminals.
35	RFTC	I	This is a pin where the selection time constant is externally connected to control the RF level.
36	LD	O	APC amplifier output terminal.
37	PD	I	APC amplifier input terminal.
38, 39	PD1, PD2	I	RFI-V amplifier inverted input pin. These pins are connected to the A+C and B+C pins of the optical pickup, receiving by currents input.
40	FEBIAS	I/O	Bias adjustment pin of the focus error amplifier.
41, 42	F, E	I	F and EIV amplifier inverted input pins. These pins are connected to the F and E of the optical pickup, receiving by current input.
43	EI	—	Gain adjustment pin of the I-V amplifier E. (When not in use of BAL automatic adjustment)
44	VEE	—	GND connection pin.
45	TEO	O	Output terminal for tacking-error amplifier. Output E-F signal.
46	LPFI	I	BAL adjustment comparator input pin. (Input through LPF from TEO)
47	TEI	I	Input terminal for tracking error.
48	ATSC	I	Window-comparator input terminal for detecting ATSC.
49	TZC	I	Input terminal for tracking-zero cross comparator.
50	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
51	VC	O	Output terminal for DC voltage reduced to half of VCC+VEE.
52	FZC	I	Input terminal for focus-zero cross comparator.

IC, CXD2589Q

Pin No.	Pin Name	I/O	Description
1, 20, 45, 60	VSS	—	GND.
2	LMUT	O	Lch-"0" detect flag.
3	RMUT	O	Rch-"0" detect flag.
4	SQCK	I	Clock input for SQSO read out.
5	SQSO	O	SubQ 80 bit serial output.
6	SENS	O	SENS signal output to CPU.
7	DATA	I	Serial data input from CPU.
8	XLAT	I	Latch input from CPU, Latch serial data at fall down.
9	CLOK	I	Clock input to serial data transfer from CPU.
10	SEIN	I	SENS input from SSP.
11	CNIN	I	Numbers of track jump are counted and input.
12	DATO	O	Serial data output to SSP.
13	XLTO	O	Serial-data latch output to SSP. Latch at fall down.
14	CLKO	O	Clock output for serial data transfer to SSP.
15	SPOA	I	Microcomputer expansion interface. (Input A)
16	SPOB	I	Microcomputer expansion interface. (Input B)
17	XLON	O	Microcomputer expansion interface. (Output)
18	FOK	I	Focus OK input terminal. Used for SENS output and servo-auto sequencer.
19, 46, 61, 80	VDD	—	Power supply. (+5V)
21	MDP	O	Servo control for spindle motor.
22	PWMI	I	External control input for spindle motor.
23	TEST	I	TEST terminal. (Connected to GND)
24	TESI	I	TEST terminal. (Connected to GND)
25	VPCO	O	Charge pump output for extensive EFM PLL.
26	VCKI	I	VCO2 oscillator input for extensive EFM PLL.
27	V16M	O	VCO2 oscillator output for extensive EFM PLL.
28	VCTL	I	VCO2 control voltage input for extensive EFM PLL.
29	PCO	O	Charge pump output for master PLL.
30	FILO	O	Filter (slave = digital PLL) output for master PLL.
31	FILI	I	Filter input for master PLL.
32	AVSS	—	Analog GND.
33	CLTV	I	VCO control voltage input for master.
34	AVDD	—	Analog power. (+5V)
35	RF	I	EFM signal input.
36	BIAS	I	Constant current input to asymmetry circuit.
37	ASYI	I	Comparison voltage input to asymmetry circuit.
38	ASYO	O	EFM full-swing output. (L=VSS, H=VDD)
39	LRCK	O	D/A interface, LR clock output f=FS.
40	LRCKI	I	LR clock input.
41	PCMD	O	D/A interface, serial data output. (2's COMP, MSB first)
42	PCMDI	I	D/A interface, serial data input. (2's COMP, MSB first)

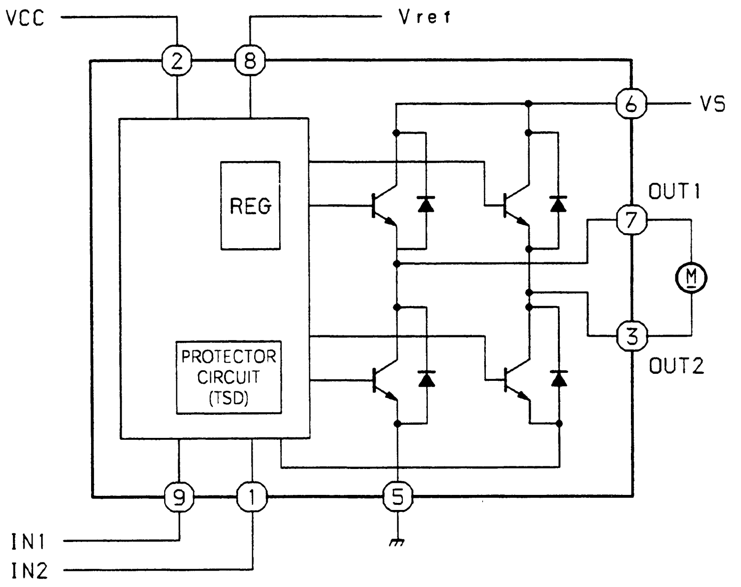
Pin No.	Pin Name	I/O	Description
43	BCK	O	D/A interface bit clock output.
44	BCKI	I	D/A interface bit clock input.
47	XUGF	O	XUGF output, MNT1 or RPCK output by switching command.
48	XPCK	O	XPLCK output, MNT0 output by switching command.
49	GFS	O	GFS output, MNT3 or XRAOF output by switching command.
50	C2PO	O	C2PO output, GTOP output by switching command.
51	XTSL	I	X'tal select input terminal, X'tal: 16.9344MHz = "L" 33.8688MHz = "H".
52	C4M	O	4.2336MHz output, Output 1/4 divided frequency of VCKI at CAV-W mode.
53	DOUT	O	Digital Out connector output signal.
54	EMPH	O	"H" when the playback disc has emphasis. "L" when it does not.
55	EMPHI	I	De-emphasis ON/OFF, "H" when ON, "L" when OFF.
56	WFCK	O	WFCK output.
57	SCOR	O	H output when the subcode sync S0 or S1 is detected.
58	SESO	O	Serial output for SubP-W.
59	EXCK	I	SBSO read out clock input.
62	SYSM	I	Mute input terminal, Active the "H" setting.
63	AVSS	—	Analogue GND.
64	AVDD	—	Analogue power supply. (+5V)
65	AOUT1	O	Lch/analogue output terminal.
66	AINI	I	Lch/OP AMP input terminal.
67	LOUT1	O	Lch/LINE output terminal.
68	AVSS	—	Analogue GND.
69	XVDD	—	Power supply for master clock.
70	XTAI	I	Input terminal for crystal oscillator circuit. Input external master clock from this terminal.
71	XTAO	O	Output terminal for crystal oscillator circuit.
72	XVSS	—	GND terminal for master clock.
73	AVSS	—	Analogue GND.
74	LOUT2	O	Rch/LINE output terminal.
75	AIN2	I	Rch/OP AMP input terminal.
76	AOUT2	O	Rch/analogue output terminal.
77	AVDD	—	Analogue power supply. (+5V)
78	AVSS	—	Analogue GND.
79	XRST	I	Reset system at "L" setting.

Note)

- PCMD is the two's complement output with MSB first.
- GTOP monitors the protection status of the Frame Sync. (H: Sync protection window opened).
- XUGF is the Frame Sync negative pulse which is obtained from the EFM signal. This is the signal before the sync protection.
- XPLCK is the inverted signal of the EFM PLL clock. The PLL works so that the fall-down edge and the changed point of the EFM signal agree.
- GFS is the signal that goes "H" when the Frame Sync and the internally inserted timing agree.
- RFCK is the signal having 136 micro-seconds (during normal speed) that is generated to have the same accuracy as X'tal.
- C2PO is the signal indicating the error status of the data.
- XRAOF is the signal that is generated when the 16k RAM goes outside the jitter margin ±4F.

IC BLOCK DIAGRAM

IC, TA7291S

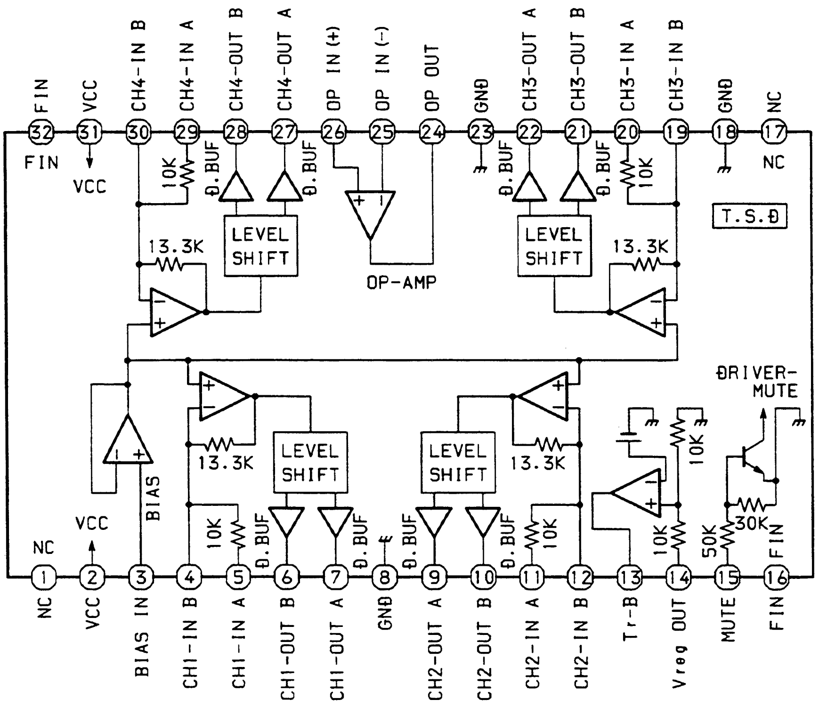

VCC
Vref
2
8
6
VS
REG
OUT1
7
M
3
OUT2
PROTECTOR
CIRCUIT
(TSD)
9
1
5
IN1
IN2

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE

NOTE : INPUT "H" ACTIVE

IC, BA6897S


FIN
VCC
CH4-IN B
CH4-IN A
CH4-OUT B
CH4-OUT A
OP IN (+)
OP IN (-)
OP OUT
GND
CH3-OUT A
CH3-OUT B
CH3-IN A
CH3-IN B
GND
NC
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
FIN
VCC
NC
10K
D.BUF
D.BUF
D.BUF
D.BUF
10K
T.S.D
13.3K
LEVEL
SHIFT
OP-AMP
LEVEL
SHIFT
13.3K
DRIVER-
MUTE
13.3K
LEVEL
SHIFT
LEVEL
SHIFT
13.3K
BIAS
10K
10K
VCC
NC
10K
D.BUF
D.BUF
D.BUF
D.BUF
10K
10K
50K
30K
FIN
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
NC
VCC
BIAS IN
CH1-IN B
CH1-IN A
CH1-OUT B
CH1-OUT A
GND
CH2-OUT A
CH2-OUT B
CH2-IN A
CH2-IN B
Tr-B
Vreg OUT
MUTE
FIN

CD TEST MODE

< How to Enter the Test Mode >

Note: Target models of this test mode.
CX-ZR550
CX-ZVR55

While pressing the CD key, insert the AC power cord to AC wall outlet.

< When the Machine Has Entered the Test Mode >

The system is initialized and the main power is turned on. During the test mode, the main power of the CD block is turned on always. The test mode starts with the [Sled mode].

< Types of Test Mode >

[Sled mode]

All displays of the FL tubes light. The optical pickup can be moved by pressing [《] or [》] key.

Pressing the[□] key establishes the [Focus mode].
Pressing the [▷] key establishes the [Play mode].

Pressing the [《] key moves the sled to outer circumference.
Pressing the [》] key moves the sled to inner circumference.
Pressing OPEN/CLOSE key opens or closes the tray.

[Focus mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search is performed in the focus mode regardless whether disc is inserted or not, or focus OK or NG. (Numbers of times of focus search is unlimited. Auto sequence is not used.)
Focus servo is not locked in even the focus is obtained.

Pressing the [▷] key establishes the [Play mode].
Pressing the [《] key decreases the track number to -1.
Pressing the [》] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

[Play mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search (numbers of search is unlimited) is performed. When focus comes to in-focus, the focus servo is locked in and the machines enters the normal play mode.
During [Play mode], GFS and sound skipping are not monitored.
When focus becomes out-of-focus, another attempt is made to search for focus.
The tracking servo and the sled servo can be turned on and off by pressing the [▷] key.

Pressing the [□] key establishes the [Sled mode].
The [▷] display can be turned on and off by pressing the [II] key .

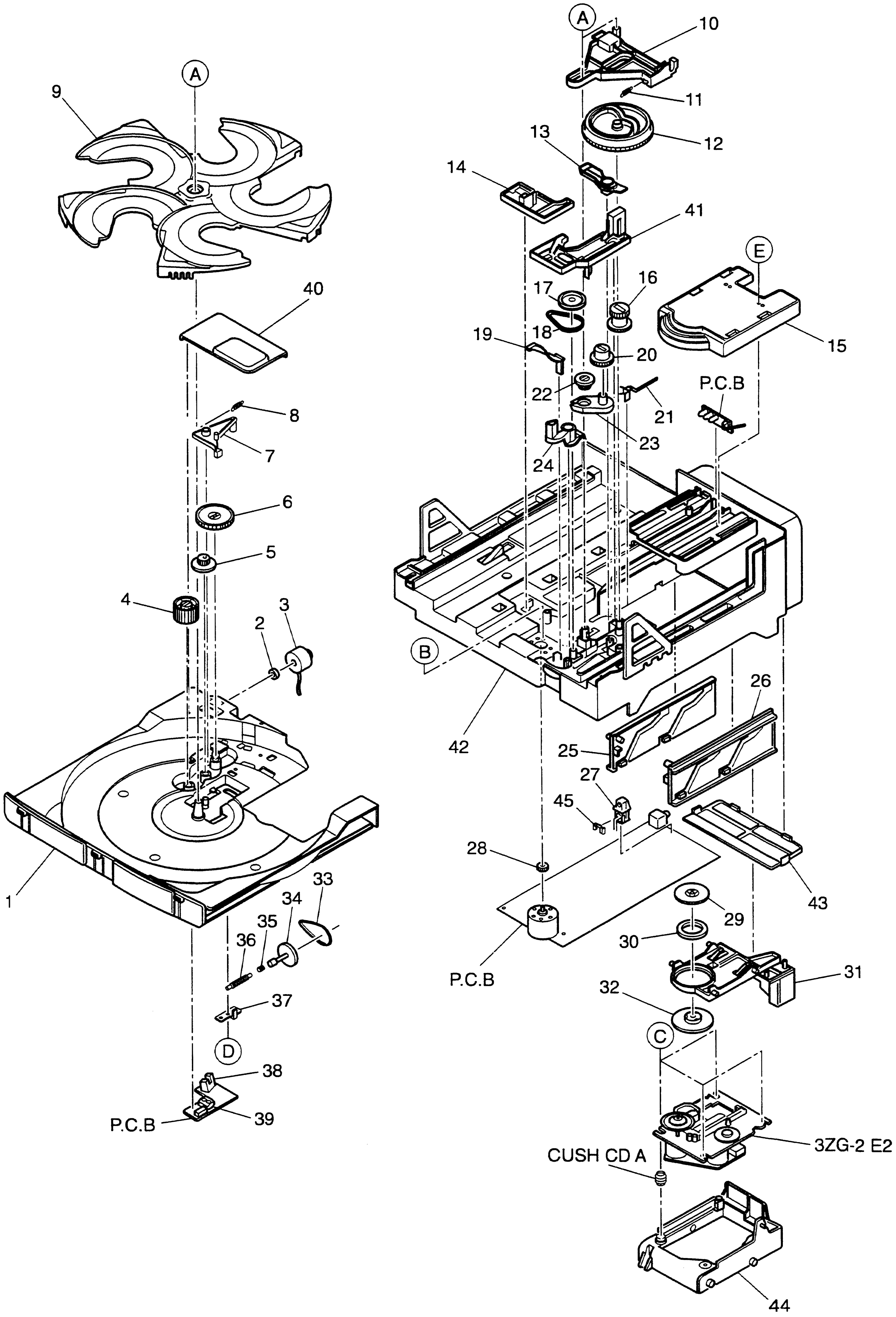
While the [II] display is turned off:
CLV-A Tracking servo: on
Sled servo: on
While the [II] display is turned on:
CLV-A Tracking servo: off
Sled servo: off

Pressing the [《] key decreases the track number to -1.
Pressing the [》] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

< How to Exit the Test Mode >

Remove the AC power cord from power outlet, or turn off the system power.

MECHANICAL EXPLODED VIEW 1/1


A
9
40
8
7
6
5
4
3
2
1
33
34
35
36
37
D
38
P.C.B
39
A
10
11
12
13
14
41
E
16
17
18
19
20
15
22
21
P.C.B
23
24
B
42
26
25
27
45
28
43
29
30
P.C.B
31
32
C
3ZG-2 E2
CUSH CD A
44

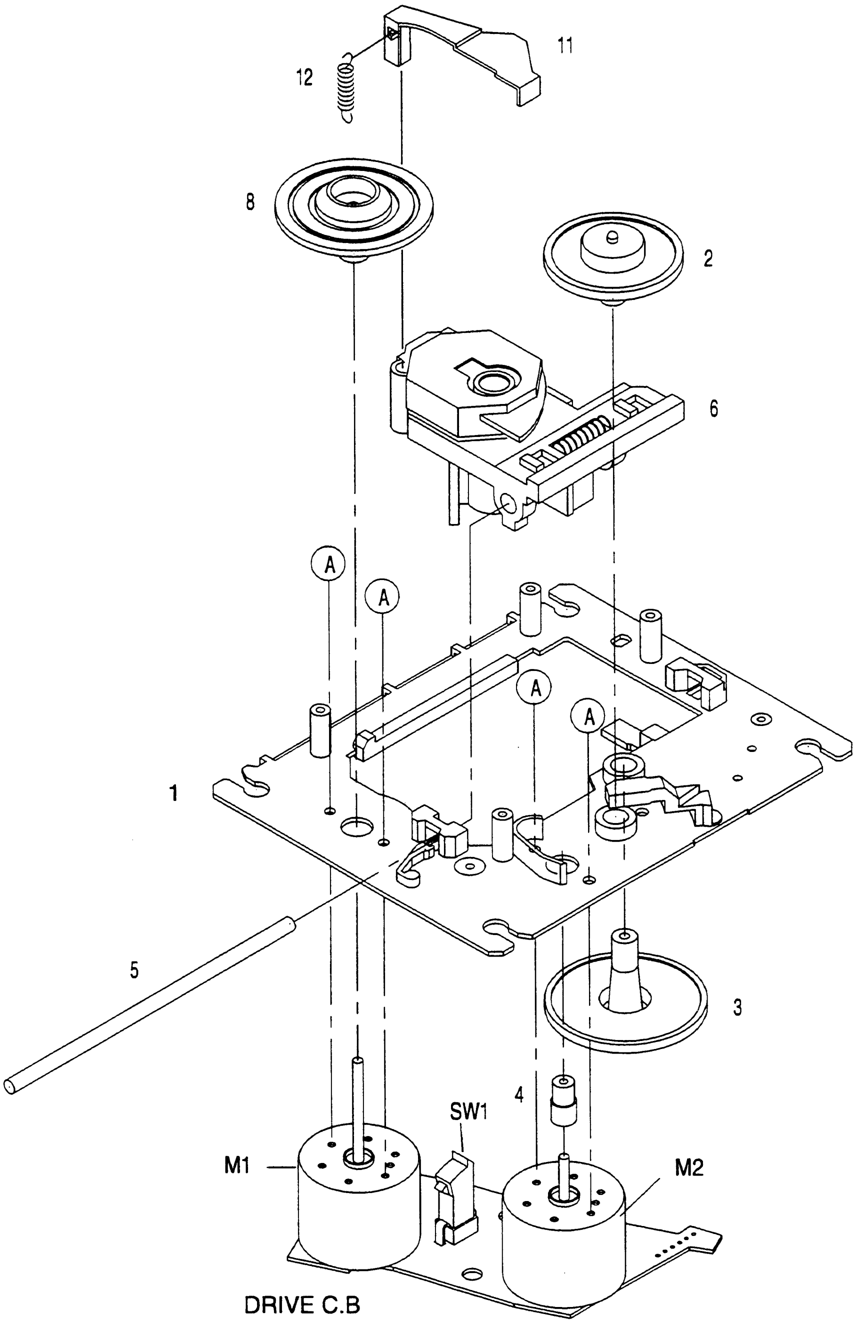
MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZG1-001-310		TRAY,5CD
2	81-ZG1-212-010		PULLY,LOAD MO
3	87-A90-036-010		MOT ASSY,RF-300CA-11
4	86-ZG1-228-110		GEAR,TT-B
5	86-ZG1-227-110		GEAR,TT-A
6	86-ZG1-223-110		GEAR,WORM-WHEEL TT
7	86-ZG1-224-110		LEVER,TT(*)
8	86-ZG1-226-010		SPR-E,LEVER TT
9	86-ZG1-002-210		TURN TABLE,5CD
10	86-ZG1-211-210		JOINT,CAM
11	86-ZG1-216-010		SPR-E,JT
12	86-ZG1-203-210		GEAR,MAIN CAM
13	86-ZG1-213-110		LEVER,LOAD
14	86-ZG1-214-110		LEVER,PROTECT
15	86-ZG1-004-010		REFLECTOR,CD
16	86-ZG1-205-110		GEAR,TRAY
17	84-ZG1-207-010		PULLEY,RELAY
18	84-ZG1-209-010		BELT,SQ1.8-117.7
19	86-ZG1-217-010		LEVER,SW
20	86-ZG1-206-110		GEAR,RELAY B
21	86-ZG1-220-110		SPR-P,LOCK
22	86-ZG1-204-110		GEAR,RELAY A
23	86-ZG1-218-110		PLATE,GEAR
24	86-ZG1-208-010		LEVER,TRAY
25	86-ZG1-209-110		SLIDER,CAM L(*)
26	86-ZG1-210-110		SLIDER,CAM R(*)
27	84-ZG1-244-310		CABI,OPTICAL<S2>
28	84-ZG2-228-010		PULLEY,MOT
29	83-ZG3-211-010		PLATE,DISC
30	83-ZG3-602-010		RING,MAG

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
31	86-ZG1-215-010		HLDR,CHUCK
32	86-ZG1-238-010		HLDR,MAGNET 6ZG N
33	86-ZG1-225-010		BELT,SQ1.2-32.9
34	86-ZG1-221-010		PULLEY,TT
35	86-ZG1-231-010		SPR-C,WORM
36	84-ZG1-256-010		GEAR,WORM N2
37	86-ZG1-232-010		SPR-P,WORM
38	86-ZG1-229-010		HLDR,SENSOR
39	86-ZG1-230-010		HLDR,DISC SENSOR
40	86-ZG1-003-110		COVER,TRAY
41	86-ZG1-212-310		SLIDER,LOAD
42	86-ZG1-201-210		CHAS,MECHA<S2,S>
42	86-ZG1-240-010		CHAS,MECHA T2<S3>
43	86-ZG1-005-110		COVER,CHAS
44	86-ZG1-202-110		HLDR,MECHA
45	84-ZG1-261-010		LID,OPTICAL
A	87-078-148-010		VFT2+3-12(F10) BLK
B	87-251-072-410		U+2.6-5
C	81-ZG1-254-010		S-SCREW,MECH HLDR
D	87-067-579-010		TAPPING SCREW, BVT2+3-8
E	87-067-703-010		TAPPING SCREW, BVT2+3-10

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-1 E2)



CD MECHANISM PARTS LIST 1/1 (3ZG-1 E2)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-247-210		CHAS ASSY,SHT5
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-240-010		SHAFT,SLIDE 3
6	87-A90-836-010		PICKUP,KSS-213F
8	83-ZG2-227-010		TURN TABLE,C1
11	83-ZG2-245-110		LEVER,SHUTTER
12	83-ZG2-250-010		SPR-E,SHT 2
A	87-261-032-210		SCREW V+2-3

MODEL NO. 6ZG-1S2

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-546-010		C-IC,CXD2589Q
	87-A20-592-040		C-IC,M51943 AML<D>
	87-001-792-080		IC,NJM2100M<D>
	87-070-305-010		IC,BA6897S<D>
	87-A20-856-010		IC,BA6898S
	87-001-982-010		IC,TA7291S
	86-ZG1-649-010		C-IC,UPD789026GB-510-MTX
TRANSISTOR			
	89-406-555-080		TR,2SD655 (0.5W)
	87-026-245-080		TR,DTC114ES
	87-026-235-080		CHIP-TR,DTC114EK
	87-026-463-080		TR,2SA933S (0.3W)
	89-324-123-080		C-TR,2SC2412K S<D>
	87-026-227-080		CHIP-TR,DTA114EK<D>
	89-421-722-380		TR,2SD2172V/W
	89-320-011-080		TR,2SC2001 (15W)
	87-026-239-080		TR,DTC114TK (0.2W)<D>
	87-026-223-080		TR,DTC143TK
	89-110-155-080		TR,2SA1015(0.4W)<D>
	89-213-292-380		TR,2SB1329QR
	87-026-608-080		C-TR,DTC 123 JK
	87-A30-075-080		C-TR,2SA1235F<D>
	89-327-125-080		CHIP TR,2SC2712GR<D>
DIODE			
	87-A40-348-080		ZENER,MTZJ3.3A
	87-027-583-080		ZENER,HZ9B1L (200MA)
	87-020-465-080		DIODE,1SS133 (110MA)<D>
	87-A40-291-080		DIODE,1N4148 (CPT)
CD MAIN C.B			
C1	87-010-196-080		CHIP CAPACITOR,0.1-25
C2	87-010-260-080		CAP, ELECT 47-25V
C3	87-010-221-040		CAP,E 470-10 SME
C4	87-010-197-020		C-CAP,S 0.01-25 B
C5	87-010-184-020		C-CAP,S 3300P-50 B
C101	87-010-263-040		CAP,E 100-10<D>
C101	87-010-550-040		CAP,E 100-6.3 GAS
C102	87-010-178-020		C-CAP,S 1000P-50 B
C103	87-010-550-040		CAP,E 100-6.3 GAS
C104	87-010-182-020		C-CAP,S 2200P-50 B
C105	87-010-198-020		C-CAP,S 0.022-25 B
C106	87-016-081-080		C-CAP,S 0.1-16 RK
C107	87-016-081-080		C-CAP,S 0.1-16 RK
C108	87-016-081-080		C-CAP,S 0.1-16 RK
C109	87-010-497-040		CAP,E 4.7-35 GAS<D>
C109	87-010-404-040		CAP,E 4.7-50 SME
C110	87-016-081-080		C-CAP,S 0.1-16 RK
C111	87-010-197-020		C-CAP,S 0.01-25 B
C112	87-010-402-040		CAP,E 2.2-50 SME
C113	87-010-382-040		CAP,E 22-25 SME
C114	87-010-213-020		C-CAP,S 0.015-25 B
C115	87-010-263-040		CAP,E 100-10
C116	87-010-197-020		C-CAP,S 0.01-25 B
C117	87-016-369-020		C-CAP,S 0.033-25 B K
C117	87-010-186-020		C-CAP,S 4700P-50 B<D>
C118	87-010-197-020		C-CAP,S 0.01-25 B
C119	87-016-369-020		C-CAP,S 0.033-25 B K
C120	87-010-197-020		C-CAP,S 0.01-25 B
C121	87-010-494-040		CAP,E 1-50 GAS<D>
C121	87-010-401-040		CAP,E 1-50 SME
C122	87-010-154-020		C-CAP,S 10P-50 CH
C123	87-010-154-020		C-CAP,S 10P-50 CH
C124	87-010-154-020		C-CAP,S 10P-50 CH
C125	87-010-596-020		C-CAP,S 0.047-16 RK
C126	87-010-596-020		C-CAP,S 0.047-16 RK
C127	87-012-140-020		C-CAP,S 470P-50 CH
C128	87-010-596-020		C-CAP,S 0.047-16 RK
C129	87-010-198-020		C-CAP,S 0.022-25 B
C130	87-016-081-080		C-CAP,S 0.1-16 RK
C131	87-010-550-040		CAP,E 100-6.3 GAS
C132	87-010-550-040		CAP,E 100-6.3 GAS
C133	87-012-158-020		C-CAP,S 390P-50 J CH
C150	87-010-145-020		C-CAP,S 1P-50 C CH<D>
C202	87-010-596-020		C-CAP,S 0.047-16 RK
C203	87-010-188-020		C-CAP,S 6800P-50 B
C204	87-012-156-020		C-CAP,S 220P-50 CH
C205	87-018-133-080		CAPACITOR,CER 4700P-16V<D>
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16
C206	87-010-400-040		CAP,E 0.47-50
C207	87-010-197-020		C-CAP,S 0.01-25 B
C208	87-010-318-020		C-CAP,S 47P-50 CH<D>
C209	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C210	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020		C-CAP,S 680P-50 J SL
C212	87-010-176-020		C-CAP,S 680P-50 J SL
C213	87-010-400-040		CAP,E 0.47-50
C213	87-010-382-040		CAP,E 22-25 SME<D>
C214	87-010-400-040		CAP,E 0.47-50
C214	87-010-382-040		CAP,E 22-25 SME<D>
C215	87-010-318-020		C-CAP,S 47P-50 CH
C216	87-010-318-020		C-CAP,S 47P-50 CH
C217	87-010-101-040		CAP,E 220-16 SME
C217	87-010-380-040		CAP,E 47-16 SME<D>
C218	87-010-197-020		C-CAP,S 0.01-25 B
C219	87-010-196-020		C-CAP,S 0.1-25 F
C220	87-010-370-040		CAP,E 330-6.3 SME
C221	87-010-197-080		CAP, CHIP 0.01 DM
C222	87-010-186-020		C-CAP,S 4700P-50 B
C223	87-016-081-020		C-CAP,S 0.1-16 RK
C224	87-010-805-080		CAP, S 1-16
C228	87-018-134-080		CAPACITOR,TC-U 0.01-16
C230	87-018-209-080		CAP, CER 0.1-50V<D>
C231	87-018-209-080		CAP, CER 0.1-50V<D>
C231	87-018-134-080		CAPACITOR,TC-U 0.01-16
C301	87-010-101-080		CAP, ELECT 220-16<D>
C302	87-010-263-080		CAP, ELECT 100-10V<D>
C305	87-010-318-020		C-CAP,S 47P-50 CH<D>
C306	87-010-318-020		C-CAP,S 47P-50 CH<D>
C307	87-010-405-080		CAP, ELECT 10-50V<D>
C308	87-010-405-080		CAP, ELECT 10-50V<D>
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-403-040		CAP,E 3.3-50 SME
C501	87-010-555-040		CAP,E 100-10 GAS
C501	87-016-459-040		CAP,E 470-10 SMG<D>
C502	87-010-197-020		C-CAP,S 0.01-25 B
C503	87-010-263-040		CAP,E 100-10<D>
C503	87-010-555-040		CAP,E 100-10 GAS
C504	87-010-196-020		C-CAP,S 0.1-25 F
C505	87-010-196-020		C-CAP,S 0.1-25 F
C506	87-010-196-020		C-CAP,S 0.1-25 F
C507	87-010-196-020		C-CAP,S 0.1-25 F
C508	87-010-221-040		CAP,E 470-10 SME
C508	87-016-459-040		CAP,E 470-10 SMG<D>
C509	87-010-196-020		C-CAP,S 0.1-25 F
C510	87-010-196-020		C-CAP,S 0.1-25 F
C511	87-010-221-040		CAP,E 470-10 SME
C512	87-010-197-020		C-CAP,S 0.01-25 B
C601	87-010-197-020		C-CAP,S 0.01-25 B
C602	87-016-251-040		CAP,E 220-16 SMG<D>
C602	87-010-385-010		CAP,E 220-25
C603	87-010-196-020		C-CAP,S 0.1-25 F
C701	87-010-322-020		C-CAP,S 100P-50 CH<D>
C702	87-010-318-020		C-CAP,S 47P-50 CH<D>

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C703	87-010-318-020		C-CAP,S 47P-50 CH<D>
C705	87-010-178-020		C-CAP,S 1000P-50 B<D>
C705	87-010-322-020		C-CAP,S 100P-50 CH
C706	87-018-209-080		CAP, CER 0.1-50V<D>
C801	87-010-263-040		CAP,E 100-10
C802	87-010-197-020		C-CAP,S 0.01-25 B
C803	87-010-318-020		C-CAP,S 47P-50 CH
C804	87-010-318-020		C-CAP,S 47P-50 CH
C807	87-010-318-020		C-CAP,S 47P-50 CH
C808	87-010-318-020		C-CAP,S 47P-50 CH
C809	87-010-318-020		C-CAP,S 47P-50 CH
C810	87-010-318-020		C-CAP,S 47P-50 CH
C901	87-010-260-080		CAP, ELECT 47-25V<D>
C901	87-010-260-040		CAP,E 47-25 SME<D>
C902	87-010-196-020		C-CAP,S 0.1-25 F<D>
C902	87-010-196-080		CHIP CAPACITOR,0.1-25<D>
CN2	86-ZG1-609-010		CONN ASSY,6P
CON1	87-A60-424-010		CONN,16P V TOC-B
CON2	87-009-034-010		CONN,6P PH V
CON3	87-A60-133-010		CONN,8P V FE
CON5	87-A60-154-010		CONN,6P H FE
CON6	87-099-033-010		16P 6216 H<D>
CON6	87-A60-160-010		CONN,12P H FE
CON301	87-009-346-010		CONN,3P PH H<D>
CON302	87-009-350-010		CONN,7P PH H<D>
FB9	87-A50-192-080		C-COIL,S BLM21P300S
FB50	87-A50-192-080		C-COIL,S BLM21P300S
FB75	87-008-372-080		FILTER, EMI BL OIRNI
FB84	87-008-372-080		FILTER, EMI BL OIRNI
FB90	87-003-223-010		FERRITE BEAD BLO2RN2
FB94	87-003-223-010		FERRITE BEAD BLO2RN2
FB101	83-XM1-617-080		C-COIL,BK2125HM601
FB301	87-008-372-080		FILTER, EMI BL OIRNI<D>
FB401	87-008-372-080		FILTER, EMI BL OIRNI<D>
FC1	86-ZG1-605-010		CABLE,FFC 16P

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
FC2	86-ZG1-667-010		F-CABLE,8P 1.25 175MM BLACK
L31	87-003-102-080		COIL, 10UH
L101	87-003-102-080		COIL, 10UH
L201	87-003-102-080		COIL, 10UH<D>
LED901	87-A40-123-010		LED,SLZ-8128A-01-B<D>
M601	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
R101	87-022-363-020		C-RES,S 68K-1/10W F
R102	87-022-363-020		C-RES,S 68K-1/10W F
R103	87-022-363-020		C-RES,S 68K-1/10W F
R104	87-022-363-020		C-RES,S 68K-1/10W F
R105	87-022-365-020		C-RES,S 100K-1/10W F
R106	87-022-365-020		C-RES,S 100K-1/10W F
R301	87-025-337-080		RESISTOR, 1/4W 47<D>
R420	87-029-060-080		RES,FUSE 33-1/4 W
S601	87-036-109-010		PUSH SWITCH
S602	87-036-109-010		PUSH SWITCH
S603	87-036-109-010		PUSH SWITCH
X201	87-A70-046-010		VIB,XTAL 16.934MHZ
X801	87-A70-075-080		VIB,CER 4.19MHZ CRHF

LED C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-733-080		LED,SEL1250SM

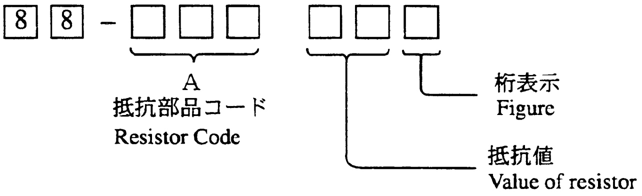
T-T C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C411	87-018-214-080		CAP TC U 0.1-50F
CON8	87-A60-156-010		CONN,8P H FE
LED411	87-070-288-010		LED,GL380
M401	87-A90-036-010		MOT ASSY,RF-300CA-11
PS401	87-A90-156-010		SNSR,SG-240
Q411	87-A30-031-010		P-TR,PT380F
S401	87-036-109-010		PUSH SWITCH

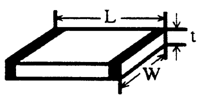
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

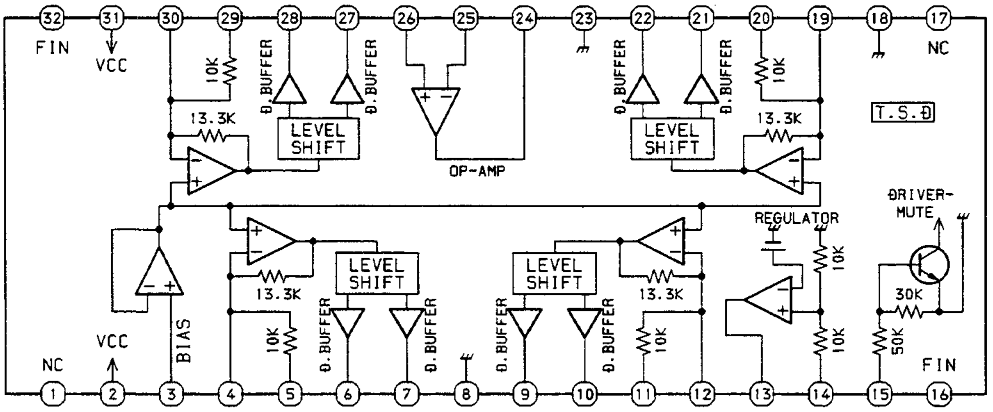
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード :A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the common section.

- IC DESCRIPTION .... See page 17
- MECHANICAL EXPLODED VIEW .... See page 23
- MECHANICAL PARTS LIST .... See page 24
- CD MECHANISM EXPLODED VIEW .... See page 25
- CD MECHANISM PARTS LIST .... See page 25

IC BLOCK DIAGRAM

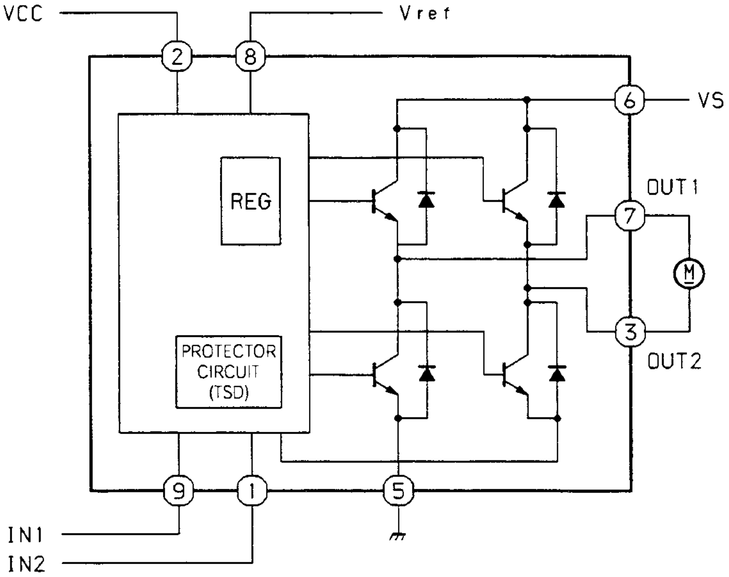
IC, BA6898S



32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
FIN
VCC
NC
10K
D.BUFFER
D.BUFFER
D.BUFFER
D.BUFFER
13.3K
LEVEL SHIFT
LEVEL SHIFT
OP-AMP
T.S.D
DRIVER-MUTE
REGULATOR
13.3K
LEVEL SHIFT
LEVEL SHIFT
13.3K
13.3K
10K
10K
10K
10K
30K
50K
BIAS
VCC
NC
FIN
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

T.S.D:Thermal shift down circuit
D.BUFFER:Drive Buffer

IC, TA7291S



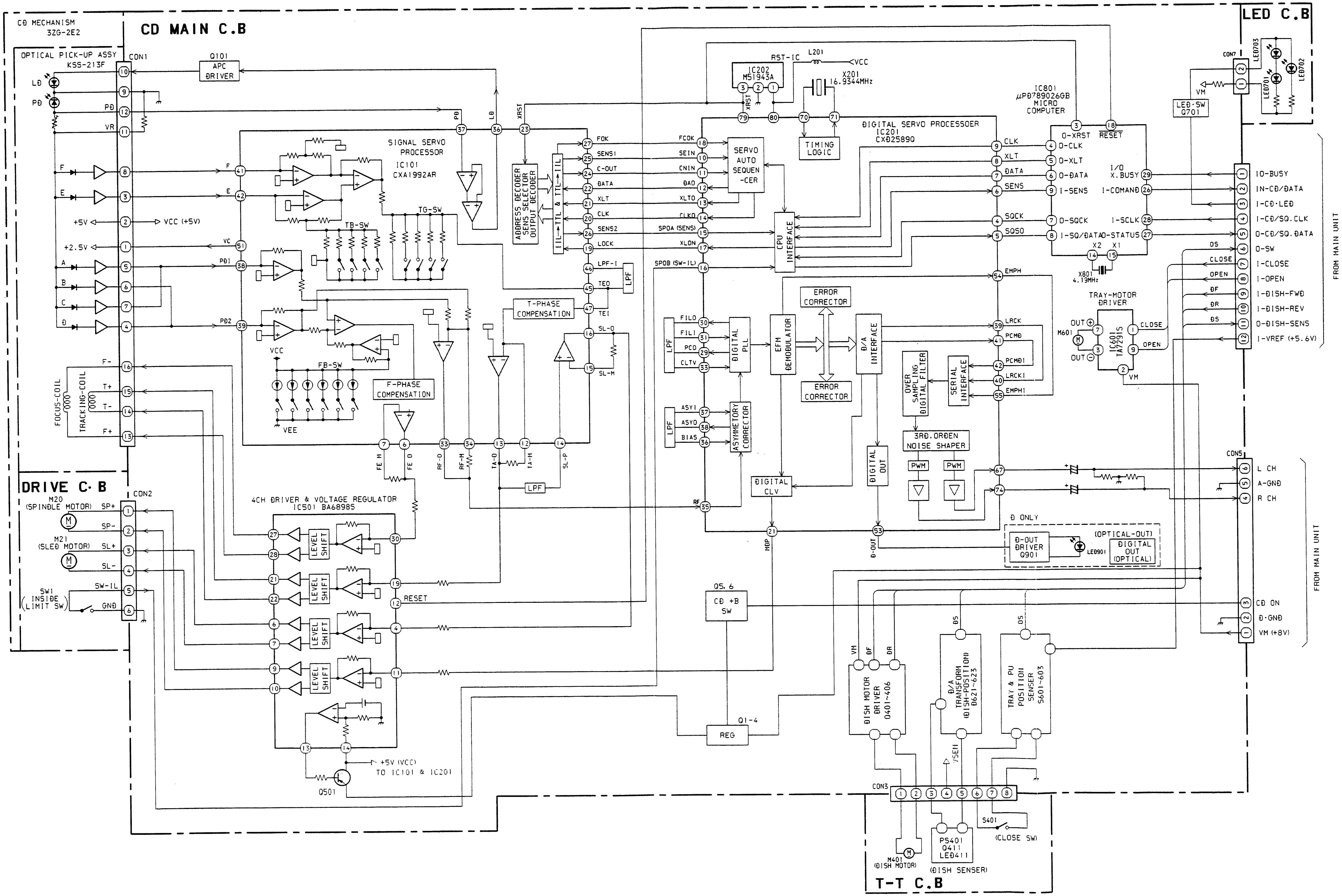
VCC
Vref
2
8
6
VS
REG
OUT1
7
M
3
OUT2
PROTECTOR CIRCUIT (TSD)
9
1
5
IN1
IN2

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

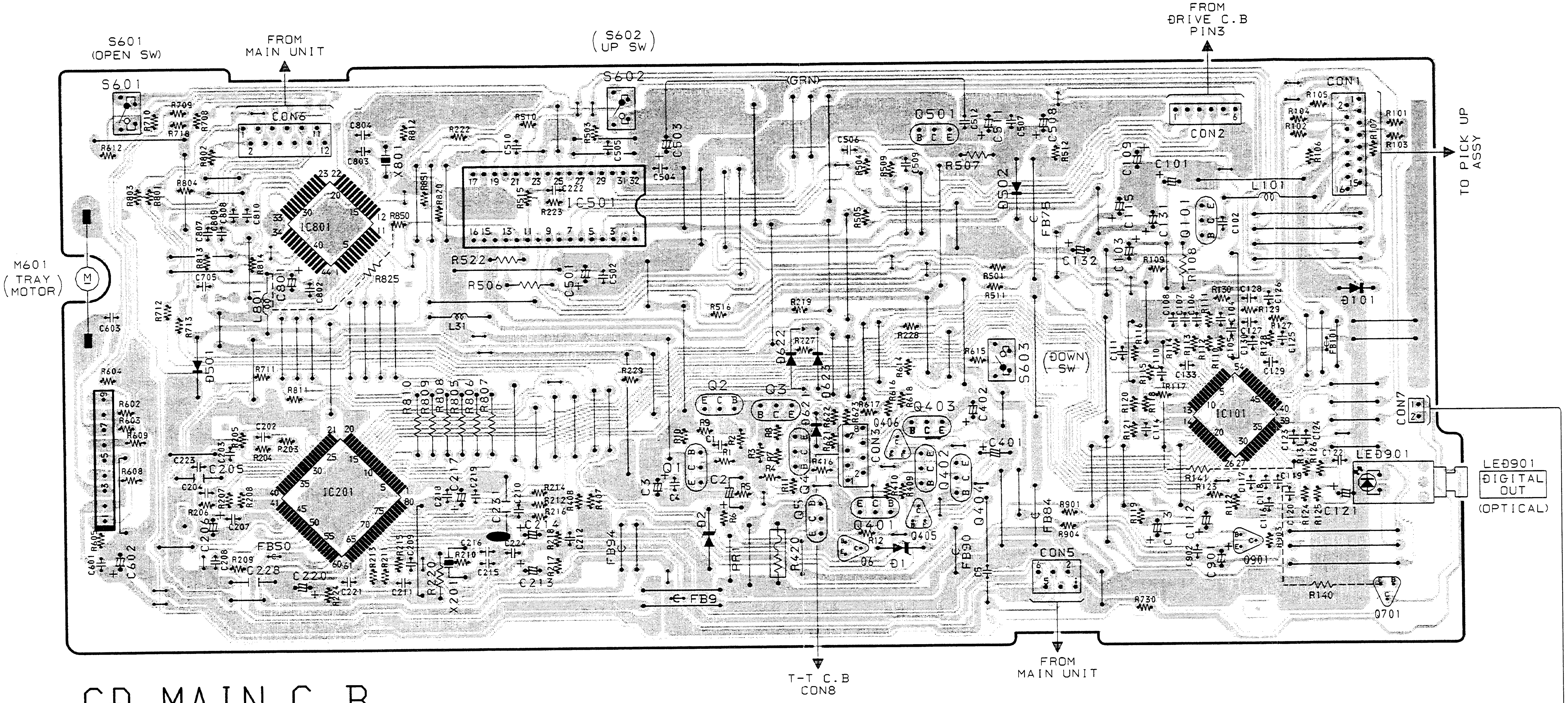
∞ : HI IMPEDANCE

NOTE : INPUT "H" ACTIVE

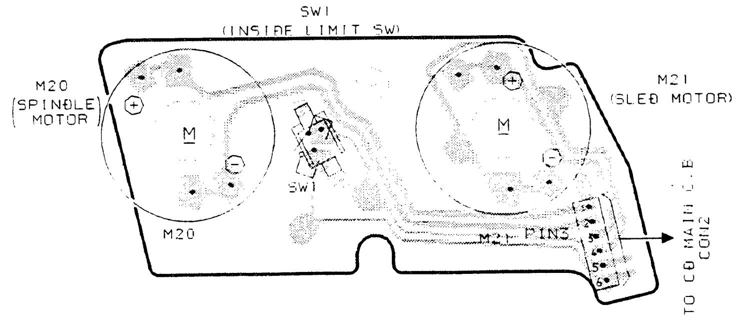
BLOCK DIAGRAM


CD MECHANISM
3ZG-2E2
OPTICAL PICK-UP ASSY
KSS-213F
CD MAIN C.B
LED C.B
DRIVE C.B
T-T C.B
CON1
CON2
CON3
CON5
CON7
Q101
APC DRIVER
LD
PD
VR
FOCUS-COIL
TRACKING-COIL
F-
T+
T-
F+
+5V
+2.5V
VCC (+5V)
SIGNAL SERVO PROCESSOR
IC101
CXA1992AR
TB-SW
TG-SW
FB-SW
VCC
VEE
F-PHASE COMPENSATION
T-PHASE COMPENSATION
ADDRESS DECODER
SENS SELECTOR
OUTPUT DECODER
IIL→TTL & TTL→IIL
LPF
FOK
SENS1
C-OUT
DATA
XLT
CLK
SENS2
LOCK
LPF-I
TEO
TEI
SL-O
SL-M
SL-P
FE M
FE O
RF-O
RF-M
TA-O
TA-M
XRST
RST-IC
L201
VCC
IC202
M51943A
X201
16.9344MHz
TIMING LOGIC
DIGITAL SERVO PROCESSOER
IC201
CXD2589Q
SERVO AUTO SEQUENCER
CPU INTERFACE
FCOK
SEIN
CNIN
DAO
XLTO
CLKO
SPOA (SENS)
XLON
SPOB (SW-IL)
FILO
FILI
PCO
CLTV
DIGITAL PLL
EFM DEMODULATOR
ERROR CORRECTOR
D/A INTERFACE
OVER SAMPLING DIGITAL FILTER
SERIAL INTERFACE
3RD. ORDER NOISE SHAPER
PWM
ASYI
ASYO
BIAS
ASYMMETORY CORRECTOR
DIGITAL CLV
DIGITAL OUT
RF
MDP
D-OUT
EMPH
LRCK
PCMD
PCMDI
LRCKI
EMPHI
IC801
μPD789026GB
MICRO COMPUTER
O-XRST
RESET
O-CLK
O-XLT
O-DATA
I-SENS
O-SOCK
I-SQ/DATA
I/O
X.BUSY
I-COMAND
I-SCLK
O-STATUS
SOCK
SOSO
X2
X1
X801
4.19MHz
TRAY-MOTOR DRIVER
IC601
TA7291S
M601
OUT⊕
OUT⊖
CLOSE
OPEN
VM
LED703
LED702
LED701
LED·SW
Q701
IO-BUSY
IN-CD/DATA
I-CD-LED
I-CD/SQ.CLK
O-CD/SQ.DATA
O-SW
I-CLOSE
I-OPEN
I-DISH-FWD
I-DISH-REV
O-DISH-SENS
I-VREF (+5.6V)
DS
DF
DR
FROM MAIN UNIT
L CH
A-GND
R CH
D ONLY
(OPTICAL-OUT)
D-OUT DRIVER
Q901
LED901
DIGITAL OUT (OPTICAL)
CD ON
D-GND
VM (+8V)
M20
(SPINDLE MOTOR)
SP+
SP-
M21
(SLED MOTOR)
SL+
SL-
SW1
(INSIDE LIMIT SW)
SW-IL
GND
4CH DRIVER & VOLTAGE REGULATOR
IC501 BA6898S
LEVEL SHIFT
RESET
+5V (VCC)
TO IC101 & IC201
Q501
QS. 6
CD +B SW
Q1-4
REG
DISH MOTOR DRIVER
Q401~406
D/A TRANSFORM (DISH-POSITION)
Q621~623
TRAY & PU POSITION SENSER
S601~603
VSEN
S401
(CLOSE SW)
P5401
Q411
LED411
(DISH SENSER)
M401
(DISH MOTOR)

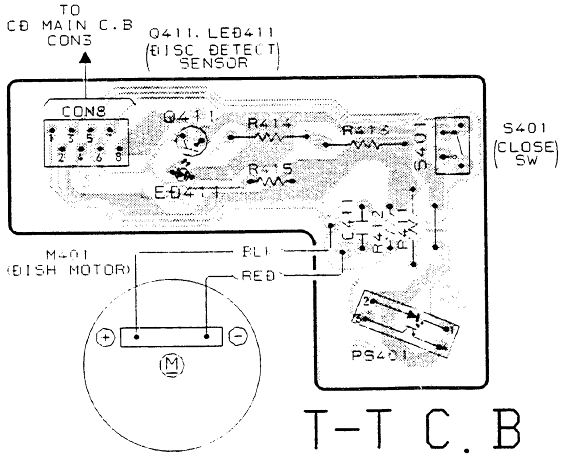
WIRING


S601
(OPEN SW)
FROM
MAIN UNIT
(S602)
(UP SW)
FROM
DRIVE C.B
PIN3
TO PICK UP
ASSY
M601
(TRAY)
(MOTOR)
CON6
CON2
CON1
IC801
IC501
IC201
IC101
Q501
D502
S603
(DOWN)
(SW)
CON5
CON7
LED901
LED901
DIGITAL
OUT
(OPTICAL)
T-T C.B
CON8
FROM
MAIN UNIT

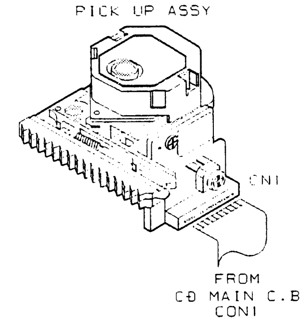
CD MAIN C.B

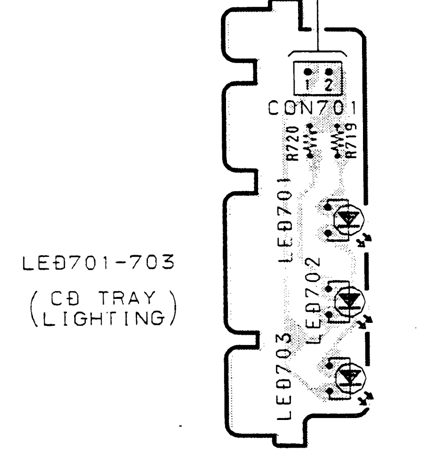

SW1
(INSIDE LIMIT SW)
M20
(SPINDLE)
MOTOR
M21
(SLED MOTOR)
SW1
M20
M21 PIN3
TO CD MAIN C.B
CON2

DRIVE C.B


TO
CD MAIN C.B
CON5
Q411, LED411
(DISC DETECT)
SENSOR
CON8
Q411
R414
R413
S401
S401
(CLOSE)
SW
LED411
R415
M401
(DISH MOTOR)
BL
RED
PS401

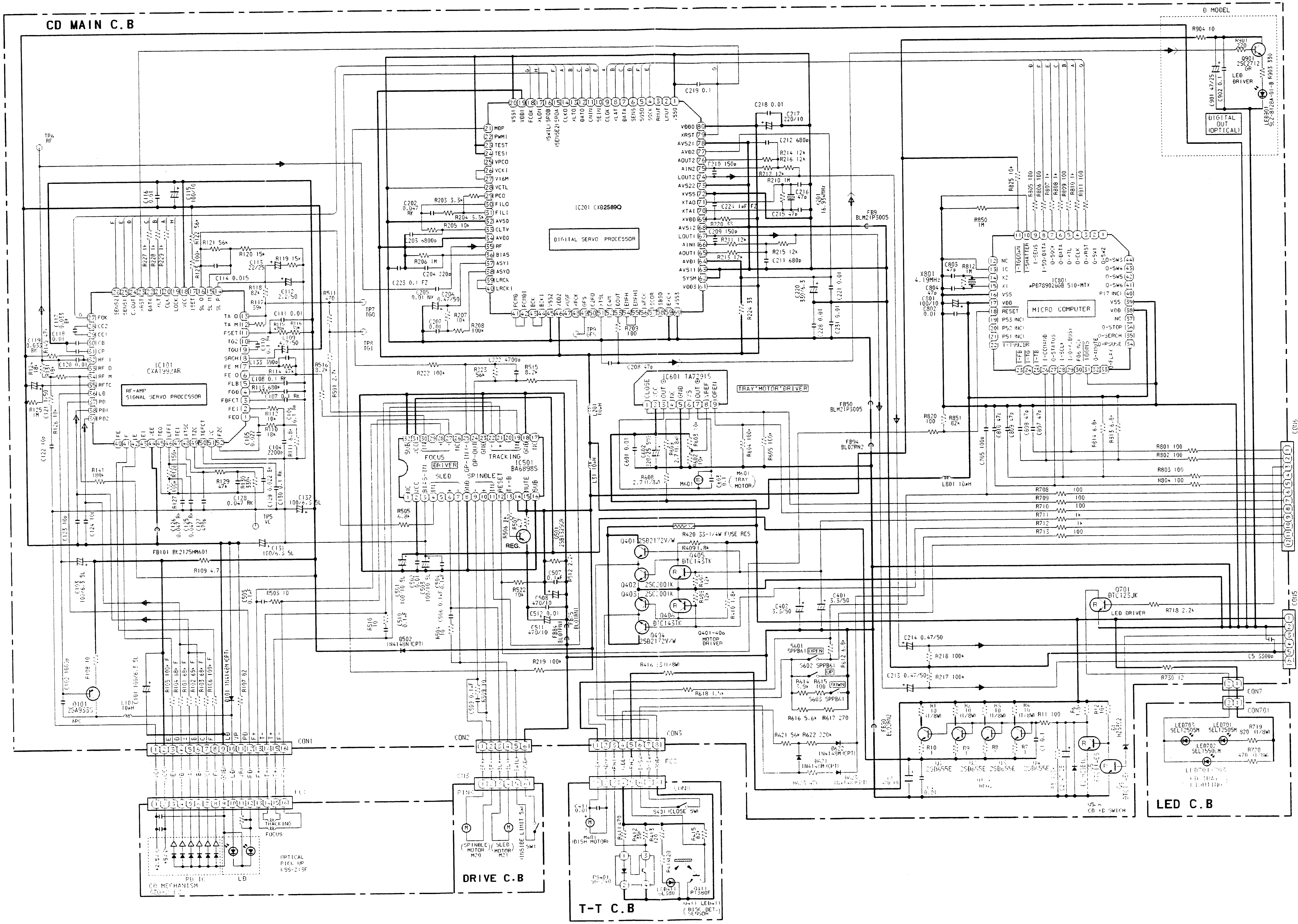
T-T C.B


PICK UP ASSY
CN1
FROM
CD MAIN C.B
CON1


CON701
R720
R719
LED701
LED702
LED703
LED701-703
(CD TRAY)
(LIGHTING)

LED C.B

SCHEMATIC DIAGRAM



CD MAIN C.B
B MODEL
IC101 CXA1992AR
RF-AMP SIGNAL SERVO PROCESSOR
IC201 CXD2589Q
DIGITAL SERVO PROCESSOR
IC501 BA6898S
FOCUS DRIVER
TRACKING
SLED
SPINDLE
IC601 TA7291S
TRAY MOTOR DRIVER
IC801 μPD78902GB 510-MTX
MICRO COMPUTER
X801 4.19MHz
X201 16.93MHz
Q901 2SC2712 GR
LED DRIVER
LED901 SLZ-8128A-01-B
DIGITAL OUT (OPTICAL)
Q701 DTC123JK
LED DRIVER
Q401-406 MOTOR DRIVER
Q401 2SD2172V/W
Q402 2SC2001K
Q403 2SC2001K
Q404 2SD2172V/W
Q405 DTC143TK
Q406 DTC143TK
R420 33-1/4W FUSE RES
Q501 2SB1326R
REG.
Q101 2SA955S
M601 TRAY MOTOR
S601 SPPB61 OPEN
S602 SPPB61 UP
S603 SPPB61 DOWN
CON1
CON2
CON3
CON5
CON6
CON7
CON701
TO-BUSY
IN-CD/DATA
I-CD.LED
I-CD/SQ.CLI
O-CD/SQ.DATA
O-CD/SW
I-CLOSE
I-OPEN
I-DISH.FWD
I-DISH.REV
O-DISH.SENS
I-VREF
TO/FROM MAIN UNIT
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
TO/FROM MAIN UNIT
LED C.B
LED701 SEL1250SM
LED702 SEL1550LM
LED703 SEL1250SM
CD SW SWITCH
DRIVE C.B
SPINDLE MOTOR M20
SLED MOTOR M21
INSIDE LIMIT SW
T-T C.B
M401 DISH MOTOR
S431 CLOSE SW
Q411 PT380F
Q411 LED411 DISC DET.
OPTICAL PICK UP KSS-213F
CD MECHANISM
PD IC
LD
TRACKING
FOCUS
TP4 RF
TP5 VC
TP7 TGO
TP8 TGI
TP9 GFS

IC DESCRIPTION

IC, µPD789026GB

Pin No.	Pin Name	I/O	Description
1	O-SW1	O	Not used.
2	O-SW2	O	
3	O-XRST	O	XRST input to DSP. Low output during 100 m seconds after about 100 m seconds of resetting the system.
4	O-CLK	O	Clock input to DSP.
5	O-XTL	O	Latch input to DSP.
6	O-DATA	O	Data input to DSP.
7	O-SQCK	O	SUB-Q data read-out clock to DSP.
8	I-SQ-DATA	I	SUB-Q input from DSP.
9	I-SENS	I	SENS input from DSP.
10	$\overline{\text{I-SHATTER}}$	I	Connected to GND.
11	$\overline{\text{I-TGDOWN}}$	I	
12	NC	—	Not used.
13	IC	—	Connected to GND.
14	X2	O	Output terminal for external ceramic oscillator.
15	X1	I	Input terminal for external ceramic oscillator.
16	VSS	—	GND of microprocessor.
17	VDD	—	Power supply of microprocessor.
18	$\overline{\text{RESET}}$	I	Microprocessor reset input.
19	P53	—	Not used.
20	P52	—	
21	P51	—	
22	$\overline{\text{I-1992BR}}$	I	
23	$\overline{\text{I-FB}}$	I	
24	$\overline{\text{I-TG}}$	I	
25	$\overline{\text{I-TB}}$	I	
26	I-COMMAND	I	Command input from main microprocessor.
27	O-STATUS	O	Data output to main microprocessor.
28	I-SCLK	I	O-status read-out clock from main microprocessor/Clock for I-command.
29	X-BUSY	I/O	Flag for confirmation of busy and ready with the main microprocessor.
30	P06	—	Not used.
31	$\overline{\text{100MS}}$	—	Connected to GND.
32	O-AMUTE	O	Low output during playback only.
33	O-PLAY	O	High output during playback only
34	O-PAUSE	O	High output during pause only.
35	O-SERCH	O	High output during search only.
36	O-STOP	O	High output during stop only.
37	NC	—	Not used.
38	VDD	—	Power supply of microprocessor.
39	VSS	—	GND of microprocessor.
40	P17	—	Not used.

IC DESCRIPTION
IC, µPD789026GB

Pin No.	Pin Name	I/O	Description
1	O-SW1	O	Not used.
2	O-SW2	O	
3	O-XRST	O	XRST input to DSP. Low output during 100 m seconds after about 100 m seconds of resetting the system.
4	O-CLK	O	Clock input to DSP.
5	O-XTL	O	Latch input to DSP.
6	O-DATA	O	Data input to DSP.
7	O-SQCK	O	SUB-Q data read-out clock to DSP.
8	I-SQ-DATA	I	SUB-Q input from DSP.
9	I-SENS	I	SENS input from DSP.
10	$\overline{\text{I-SHATTER}}$	I	Connected to GND.
11	$\overline{\text{I-TGDOWN}}$	I	
12	NC	—	Not used.
13	IC	—	Connected to GND.
14	X2	O	Output terminal for external ceramic oscillator.
15	X1	I	Input terminal for external ceramic oscillator.
16	VSS	—	GND of microprocessor.
17	VDD	—	Power supply of microprocessor.
18	$\overline{\text{RESET}}$	I	Microprocessor reset input.
19	P53	—	Not used.
20	P52	—	
21	P51	—	
22	$\overline{\text{I-1992BR}}$	I	
23	$\overline{\text{I-FB}}$	I	
24	$\overline{\text{I-TG}}$	I	
25	$\overline{\text{I-TB}}$	I	
26	I-COMMAND	I	Command input from main microprocessor.
27	O-STATUS	O	Data output to main microprocessor.
28	I-SCLK	I	O-status read-out clock from main microprocessor/Clock for I-command.
29	X-BUSY	I/O	Flag for confirmation of busy and ready with the main microprocessor.
30	P06	—	Not used.
31	$\overline{\text{100MS}}$	—	Connected to GND.
32	O-AMUTE	O	Low output during playback only.
33	O-PLAY	O	High output during playback only
34	O-PAUSE	O	High output during pause only.
35	O-SERCH	O	High output during search only.
36	O-STOP	O	High output during stop only.
37	NC	—	Not used.
38	VDD	—	Power supply of microprocessor.
39	VSS	—	GND of microprocessor.
40	P17	—	Not used.

Pin No.	Pin Name	I/O	Description
41	O-SW6	O	Not used.
42	O-SW5	O	
43	O-SW4	O	
44	O-SW3	O	

MODEL NO. 6ZG-1S3

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-546-010		C-IC,CXD2589Q
	87-A20-592-040		C-IC,M51943 AML
	87-001-792-080		IC,NJM2100M
	87-070-305-010		IC,BA6897S
	87-A20-856-010		IC,BA6898S<D>
	87-001-982-010		IC,TA7291S
	86-ZG1-649-010		C-IC,UPD789026GB-510-MTX<D>
TRANSISTOR			
	89-406-555-080		TR,2SD655 (0.5W)<D>
	87-026-245-080		TR,DTC114ES<D>
	87-026-235-080		CHIP-TR,DTC114EK<D>
	87-026-463-080		TR,2SA933S (0.3W)
	89-324-123-080		C-TR,2SC2412K S
	87-026-227-080		CHIP-TR,DTA114EK
	89-421-722-380		TR,2SD2172V/W
	89-320-011-080		TR,2SC2001 (15W)
	87-026-239-080		TR,DTC114TK (0.2W)
	87-026-223-080		TR,DTC143TK<D>
	89-110-155-080		TR,2SA1015(0.4W)
	89-213-292-380		TR,2SB1329QR<D>
	87-026-608-080		C-TR,DTC 123 JK
	87-A30-075-080		C-TR,2SA1235F<D>
	89-327-125-080		CHIP TR,2SC2712GR<D>
DIODE			
	87-A40-348-080		ZENER,MTZJ3.3A<D>
	87-027-583-080		ZENER,HZ9B1L (200MA)<D>
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-291-080		DIODE,1N4148 (CPT)<D>
CD MAIN C.B			
C1	87-010-196-080		CHIP CAPACITOR,0.1-25<D>
C2	87-010-260-080		CAP, ELECT 47-25V<D>
C3	87-010-221-040		CAP,E 470-10 SME<D>
C4	87-010-197-020		C-CAP,S 0.01-25 B<D>
C5	87-010-184-020		C-CAP,S 3300P-50 B<D>
C101	87-010-263-040		CAP,E 100-10
C101	87-010-550-040		CAP,E 100-6.3 GAS<D>
C102	87-010-178-020		C-CAP,S 1000P-50 B
C103	87-010-550-040		CAP,E 100-6.3 GAS
C104	87-010-182-020		C-CAP,S 2200P-50 B
C105	87-010-198-020		C-CAP,S 0.022-25 B
C106	87-016-081-080		C-CAP,S 0.1-16 RK
C107	87-016-081-080		C-CAP,S 0.1-16 RK
C108	87-016-081-080		C-CAP,S 0.1-16 RK
C109	87-010-497-040		CAP,E 4.7-35 GAS
C109	87-010-404-040		CAP,E 4.7-50 SME<D>
C110	87-016-081-080		C-CAP,S 0.1-16 RK
C111	87-010-197-020		C-CAP,S 0.01-25 B
C112	87-010-402-040		CAP,E 2.2-50 SME
C113	87-010-382-040		CAP,E 22-25 SME
C114	87-010-213-020		C-CAP,S 0.015-25 B
C115	87-010-263-040		CAP,E 100-10
C116	87-010-197-020		C-CAP,S 0.01-25 B
C117	87-016-369-020		C-CAP,S 0.033-25 B K<D>
C117	87-010-186-020		C-CAP,S 4700P-50 B
C118	87-010-197-020		C-CAP,S 0.01-25 B
C119	87-016-369-020		C-CAP,S 0.033-25 B K
C120	87-010-197-020		C-CAP,S 0.01-25 B
C121	87-010-494-040		CAP,E 1-50 GAS
C121	87-010-401-040		CAP,E 1-50 SME<D>
C122	87-010-154-020		C-CAP,S 10P-50 CH
C123	87-010-154-020		C-CAP,S 10P-50 CH
C124	87-010-154-020		C-CAP,S 10P-50 CH
C125	87-010-596-020		C-CAP,S 0.047-16 RK
C126	87-010-596-020		C-CAP,S 0.047-16 RK
C127	87-012-140-020		C-CAP,S 470P-50 CH
C128	87-010-596-020		C-CAP,S 0.047-16 RK
C129	87-010-198-020		C-CAP,S 0.022-25 B
C130	87-016-081-080		C-CAP,S 0.1-16 RK
C131	87-010-550-040		CAP,E 100-6.3 GAS
C132	87-010-550-040		CAP,E 100-6.3 GAS
C133	87-012-158-020		C-CAP,S 390P-50 J CH
C150	87-010-145-020		C-CAP,S 1P-50 C CH
C202	87-010-596-020		C-CAP,S 0.047-16 RK
C203	87-010-188-020		C-CAP,S 6800P-50 B
C204	87-012-156-020		C-CAP,S 220P-50 CH
C205	87-018-133-080		CAPACITOR,CER 4700P-16V
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16<D>
C206	87-010-400-040		CAP,E 0.47-50
C207	87-010-197-020		C-CAP,S 0.01-25 B
C208	87-010-318-020		C-CAP,S 47P-50 CH<D>
C209	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C210	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020		C-CAP,S 680P-50 J SL
C212	87-010-176-020		C-CAP,S 680P-50 J SL
C213	87-010-400-040		CAP,E 0.47-50<D>
C213	87-010-382-040		CAP,E 22-25 SME
C214	87-010-400-040		CAP,E 0.47-50<D>
C214	87-010-382-040		CAP,E 22-25 SME
C215	87-010-318-020		C-CAP,S 47P-50 CH
C216	87-010-318-020		C-CAP,S 47P-50 CH
C217	87-010-101-040		CAP,E 220-16 SME<D>
C217	87-010-380-040		CAP,E 47-16 SME
C218	87-010-197-020		C-CAP,S 0.01-25 B
C219	87-010-196-020		C-CAP,S 0.1-25 F
C220	87-010-370-040		CAP,E 330-6.3 SME
C221	87-010-197-080		CAP, CHIP 0.01 DM
C222	87-010-186-020		C-CAP,S 4700P-50 B
C223	87-016-081-020		C-CAP,S 0.1-16 RK
C224	87-010-805-080		CAP, S 1-16<D>
C228	87-018-134-080		CAPACITOR,TC-U 0.01-16<D>
C230	87-018-209-080		CAP, CER 0.1-50V
C231	87-018-209-080		CAP, CER 0.1-50V
C231	87-018-134-080		CAPACITOR,TC-U 0.01-16<D>
C301	87-010-101-080		CAP, ELECT 220-16
C302	87-010-263-080		CAP, ELECT 100-10V
C305	87-010-318-020		C-CAP,S 47P-50 CH
C306	87-010-318-020		C-CAP,S 47P-50 CH
C307	87-010-405-080		CAP, ELECT 10-50V
C308	87-010-405-080		CAP, ELECT 10-50V
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-403-040		CAP,E 3.3-50 SME
C501	87-010-555-040		CAP,E 100-10 GAS<D>
C501	87-016-459-040		CAP,E 470-10 SMG
C502	87-010-197-020		C-CAP,S 0.01-25 B
C503	87-010-263-040		CAP,E 100-10
C503	87-010-555-040		CAP,E 100-10 GAS<D>
C504	87-010-196-020		C-CAP,S 0.1-25 F
C505	87-010-196-020		C-CAP,S 0.1-25 F
C506	87-010-196-020		C-CAP,S 0.1-25 F
C507	87-010-196-020		C-CAP,S 0.1-25 F
C508	87-010-221-040		CAP,E 470-10 SME<D>
C508	87-016-459-040		CAP,E 470-10 SMG
C509	87-010-196-020		C-CAP,S 0.1-25 F
C510	87-010-196-020		C-CAP,S 0.1-25 F
C511	87-010-221-040		CAP,E 470-10 SME<D>
C512	87-010-197-020		C-CAP,S 0.01-25 B<D>
C601	87-010-197-020		C-CAP,S 0.01-25 B
C602	87-016-251-040		CAP,E 220-16 SMG
C602	87-010-385-010		CAP,E 220-25<D>
C603	87-010-196-020		C-CAP,S 0.1-25 F
C701	87-010-322-020		C-CAP,S 100P-50 CH
C702	87-010-318-020		C-CAP,S 47P-50 CH

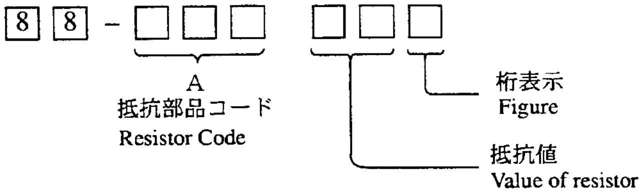
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C703	87-010-318-020		C-CAP,S 47P-50 CH
C705	87-010-178-020		C-CAP,S 1000P-50 B
C705	87-010-322-020		C-CAP,S 100P-50 CH<D>
C706	87-018-209-080		CAP, CER 0.1-50V
C801	87-010-263-040		CAP,E 100-10<D>
C802	87-010-197-020		C-CAP,S 0.01-25 B<D>
C803	87-010-318-020		C-CAP,S 47P-50 CH<D>
C804	87-010-318-020		C-CAP,S 47P-50 CH<D>
C807	87-010-318-020		C-CAP,S 47P-50 CH<D>
C808	87-010-318-020		C-CAP,S 47P-50 CH<D>
C809	87-010-318-020		C-CAP,S 47P-50 CH<D>
C810	87-010-318-020		C-CAP,S 47P-50 CH<D>
C901	87-010-260-080		CAP, ELECT 47-25V<D>
C901	87-010-260-040		CAP,E 47-25 SME<D>
C902	87-010-196-020		C-CAP,S 0.1-25 F<D>
C902	87-010-196-080		CHIP CAPACITOR,0.1-25<D>
CN2	86-ZG1-609-010		CONN ASSY,6P
CON1	87-A60-424-010		CONN,16P V TOC-B
CON2	87-009-034-010		CONN,6P PH V
CON3	87-A60-133-010		CONN,8P V FE
CON5	87-A60-154-010		CONN,6P H FE
CON6	87-099-033-010		16P 6216 H
CON6	87-A60-160-010		CONN,12P H FE<D>
CON301	87-009-346-010		CONN,3P PH H
CON302	87-009-350-010		CONN,7P PH H
FB9	87-A50-192-080		C-COIL,S BLM21P300S<D>
FB50	87-A50-192-080		C-COIL,S BLM21P300S<D>
FB75	87-008-372-080		FILTER, EMI BL OIRNI<D>
FB84	87-008-372-080		FILTER, EMI BL OIRNI<D>
FB90	87-003-223-010		FERRITE BEAD BLO2RN2<D>
FB94	87-003-223-010		FERRITE BEAD BLO2RN2<D>
FB101	83-XM1-617-080		C-COIL,BK2125HM601<D>
FB301	87-008-372-080		FILTER, EMI BL OIRNI
FB401	87-008-372-080		FILTER, EMI BL OIRNI
FC1	86-ZG1-605-010		CABLE,FFC 16P

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
FC2	86-ZG1-667-010		F-CABLE,8P 1.25 175MM BLACK
L31	87-003-102-080		COIL, 10UH<D>
L101	87-003-102-080		COIL, 10UH
L201	87-003-102-080		COIL, 10UH
LED901	87-A40-123-010		LED,SLZ-8128A-01-B<D>
M601	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
R101	87-022-363-020		C-RES,S 68K-1/10W F
R102	87-022-363-020		C-RES,S 68K-1/10W F
R103	87-022-363-020		C-RES,S 68K-1/10W F
R104	87-022-363-020		C-RES,S 68K-1/10W F
R105	87-022-365-020		C-RES,S 100K-1/10W F
R106	87-022-365-020		C-RES,S 100K-1/10W F
R301	87-025-337-080		RESISTOR, 1/4W 47
R420	87-029-060-080		RES,FUSE 33-1/4 W<D>
S601	87-036-109-010		PUSH SWITCH
S602	87-036-109-010		PUSH SWITCH
S603	87-036-109-010		PUSH SWITCH
X201	87-A70-046-010		VIB,XTAL 16.934MHZ
X801	87-A70-075-080		VIB,CER 4.19MHZ CRHF<D>
LED C.B			
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-733-080		LED,SEL1250SM
T-T C.B			
C411	87-018-214-080		CAP TC U 0.1-50F
CON8	87-A60-156-010		CONN,8P H FE
LED411	87-070-288-010		LED,GL380
M401	87-A90-036-010		MOT ASSY,RF-300CA-11
PS401	87-A90-156-010		SNSR,SG-240
Q411	87-A30-031-010		P-TR,PT380F
S401	87-036-109-010		PUSH SWITCH

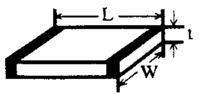
- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



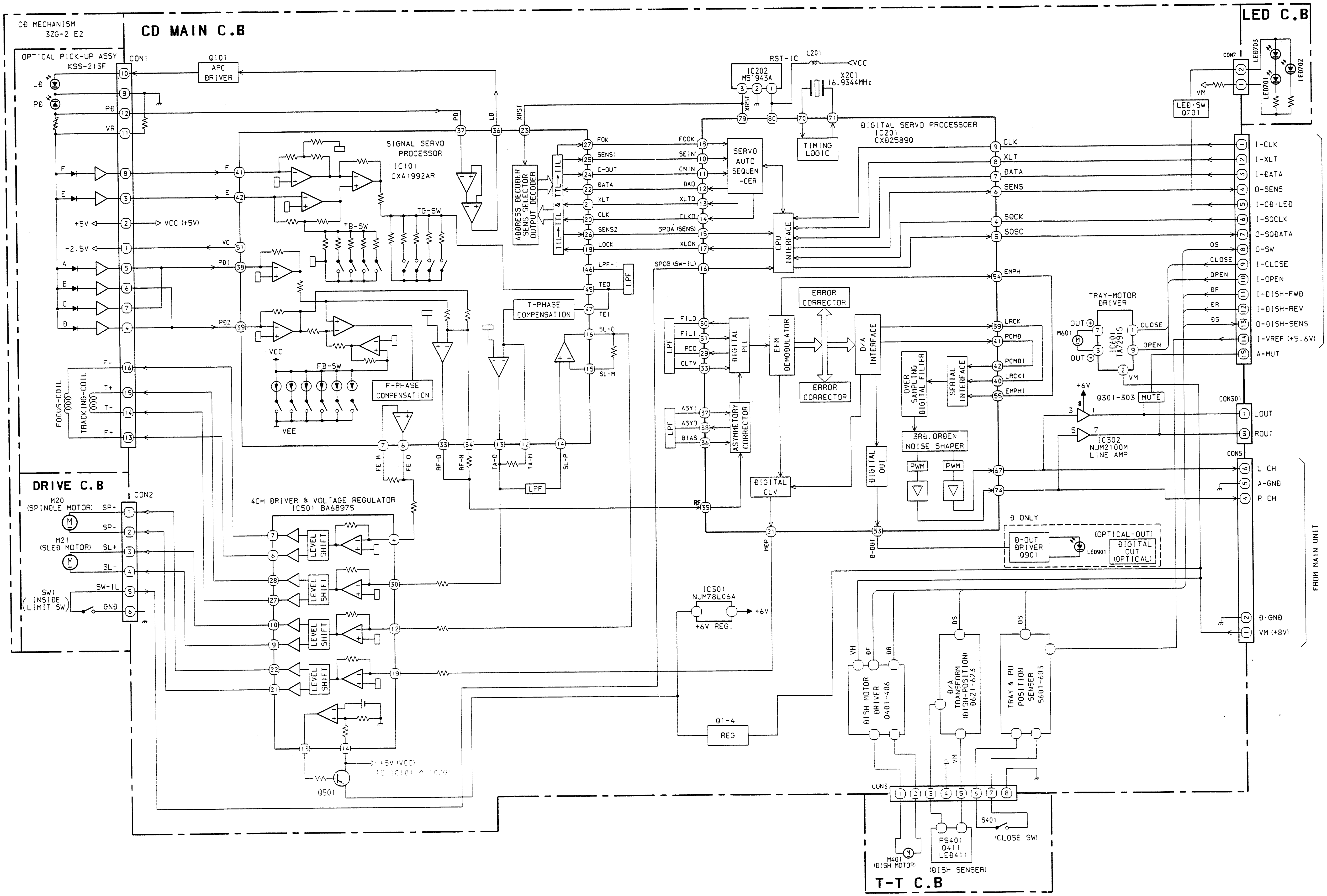
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm)				抵抗コード :A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

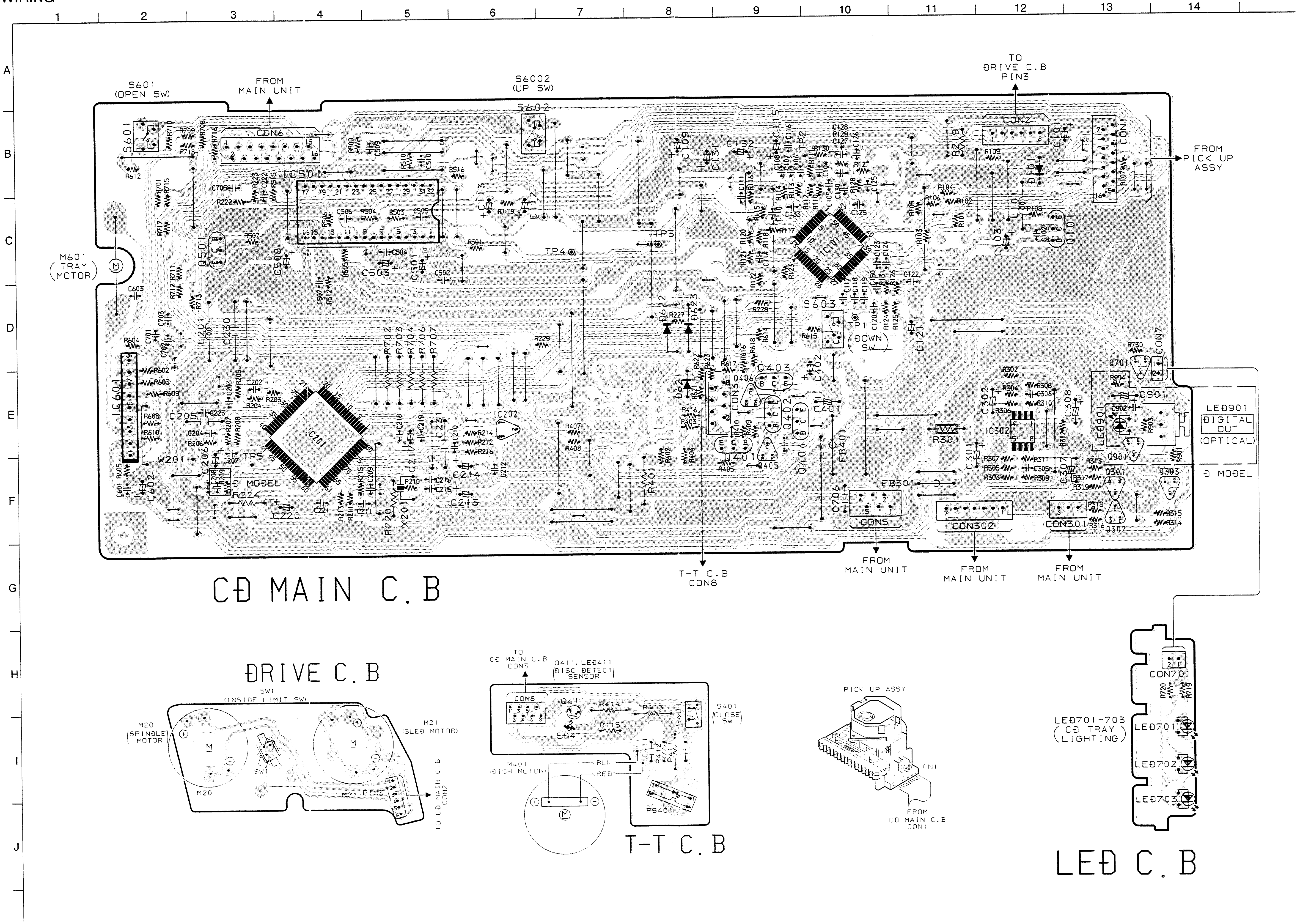
Refer to the following pages for the common section.

- IC DESCRIPTION .... See page 17
- IC BLOCK DIAGRAM .... See page 21
- MECHANICAL EXPLODED VIEW .... See page 23
- MECHANICAL PARTS LIST .... See page 24
- CD MECHANISM EXPLODED VIEW .... See page 25
- CD MECHANISM PARTS LIST .... See page 25

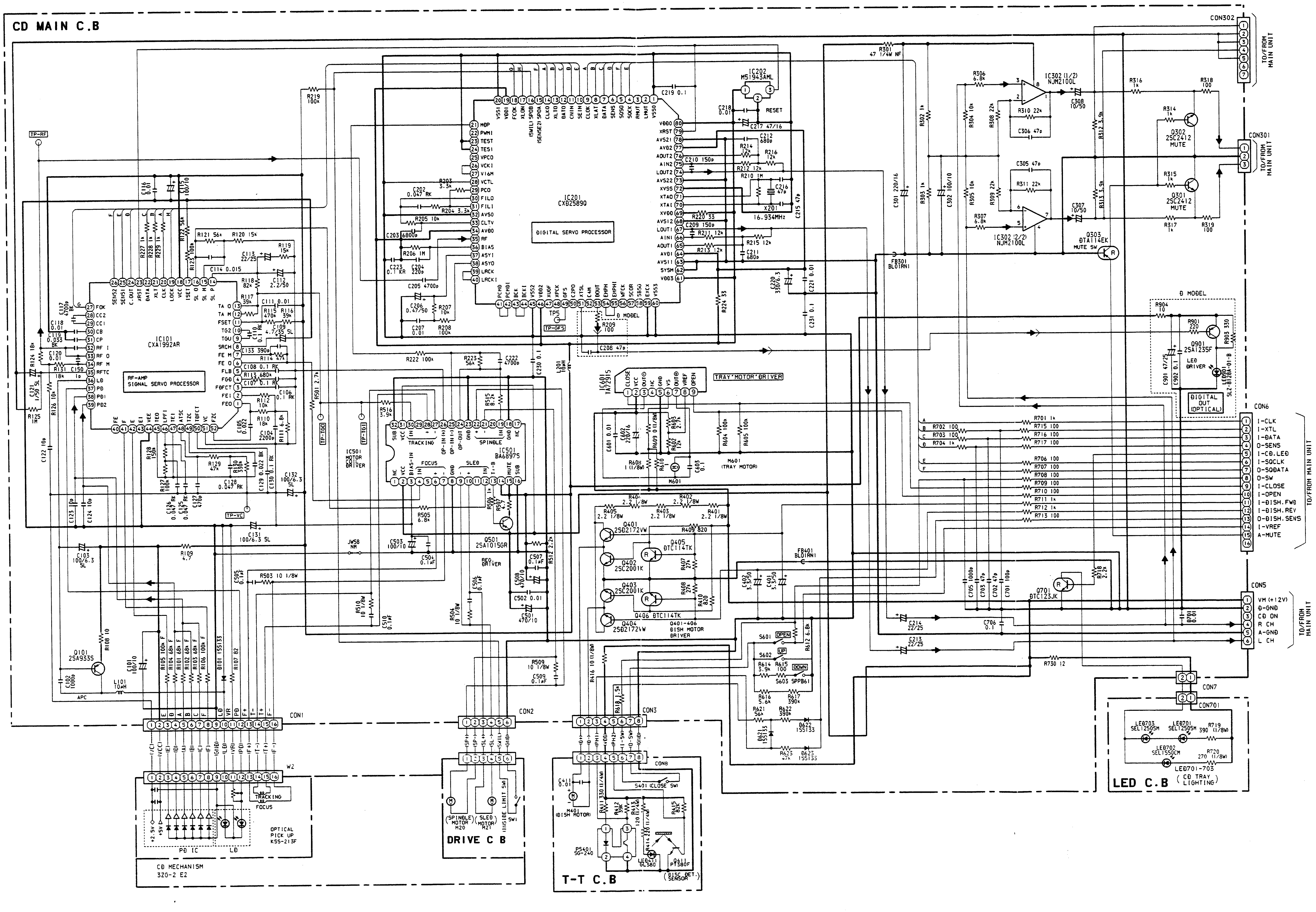
BLOCK DIAGRAM


CD MECHANISM
3ZG-2 E2
CD MAIN C.B
OPTICAL PICK-UP ASSY
KSS-213F
CON1
LD
PD
VR
F
E
+5V
VCC (+5V)
+2.5V
A
B
C
D
FOCUS-COIL
TRACKING-COIL
F-
T+
T-
F+
Q101
APC
DRIVER
SIGNAL SERVO
PROCESSOR
IC101
CXA1992AR
TB-SW
TG-SW
FB-SW
VCC
VEE
F-PHASE
COMPENSATION
T-PHASE
COMPENSATION
PD1
PD2
VC
FE M
FE O
RF-O
RF-M
TA-O
TA-M
SL-P
SL-O
SL-M
LPF-I
TEO
TEI
LPF
ADDRESS DECODER
SENS SELECTOR
OUTPUT DECODER
IIL→TTL
TTL→IIL
FOK
SENS1
C-OUT
DATA
XLT
CLK
SENS2
LOCK
XRST
RST-IC
IC202
M51943A
L201
VCC
X201
16.9344MHz
TIMING
LOGIC
DIGITAL SERVO PROCESSOER
IC201
CXD2589Q
FCOK
SEIN
CNIN
DAO
XLTO
CLKO
SPOA (SENS)
XLON
SPOB (SW-IL)
SERVO
AUTO
SEQUEN
-CER
CPU
INTERFACE
FILO
FILI
PCO
CLTV
DIGITAL
PLL
EFM
DEMODULATOR
ERROR
CORRECTOR
D/A
INTERFACE
ASYI
ASYO
BIAS
ASYMMETORY
CORRECTOR
DIGITAL
CLV
MDP
DIGITAL
OUT
D-OUT
OVER
SAMPLING
DIGITAL FILTER
SERIAL
INTERFACE
3RD. ORDEN
NOISE SHAPER
PWM
CLK
XLT
DATA
SENS
SQCK
SQSO
EMPH
LRCK
PCMD
PCMDI
LRCKI
EMPHI
D ONLY
D-OUT
DRIVER
Q901
LED901
(OPTICAL-OUT)
DIGITAL
OUT
(OPTICAL)
LED C.B
CON7
LED703
LED702
LED701
VM
LED-SW
Q701
I-CLK
I-XLT
I-DATA
O-SENS
I-CD-LED
I-SQCLK
O-SQDATA
O-SW
I-CLOSE
I-OPEN
I-DISH-FWD
I-DISH-REV
O-DISH-SENS
I-VREF (+5.6V)
A-MUT
FROM MAIN UNIT
DS
CLOSE
OPEN
DF
DR
TRAY-MOTOR
DRIVER
OUT⊕
OUT⊖
M601
IC601
LA7291S
VM
+6V
Q301-303
MUTE
IC302
NJM2100M
LINE AMP
CON301
LOUT
ROUT
CON5
L CH
A-GND
R CH
D-GND
VM (+8V)
FROM MAIN UNIT
DRIVE C.B
CON2
M20
(SPINDLE MOTOR)
SP+
SP-
M21
(SLED MOTOR)
SL+
SL-
SW1
(INSIDE LIMIT SW)
SW-IL
GND
4CH DRIVER & VOLTAGE REGULATOR
IC501 BA6897S
LEVEL SHIFT
+5V (VCC)
TO IC101 & IC201
Q501
IC301
NJM78L06A
+6V REG.
+6V
Q1-4
REG
VM
DF
DR
DISH MOTOR
DRIVER
Q401-406
DS
D/A
TRANSFORM
(DISH-POSITION)
Q621-623
TRAY & PU
POSITION
SENSER
S601-603
VM
CON3
S401
(CLOSE SW)
M401
(DISH MOTOR)
PS401
Q411
LED411
(DISH SENSER)
T-T C.B

WIRING


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
S601 (OPEN SW)
FROM MAIN UNIT
CON6
S6002 (UP SW)
S602
IC501
TO DRIVE C.B PIN3
CON2
CON1
FROM PICK UP ASSY
M601 (TRAY MOTOR)
Q501
TP4
TP3
TP2
TP1
IC101
S603
(DOWN SW)
IC601
IC201
IC202
TP5
W201
Ð MODEL
Q403
Q401
Q402
Q404
Q405
Q406
CON3
FB401
R301
IC302
CON7
Q701
C901
LEÐ901
LEÐ901 ÐIGITAL OUT (OPTICAL)
Q901
Q301
Q303
Q302
Ð MODEL
FB301
CON5
CON302
CON301
T-T C.B CON8
FROM MAIN UNIT
FROM MAIN UNIT
FROM MAIN UNIT
CÐ MAIN C.B
ÐRIVE C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
M20
SW1
M21
PIN3
TO CÐ MAIN C.B CON2
TO CÐ MAIN C.B CON3
Q411, LEÐ411 (ÐISC ÐETECT SENSOR)
CON8
Q411
LEÐ411
R414
R413
R415
S401
S401 (CLOSE SW)
C411
R412
R411
M401 (ÐISH MOTOR)
BLK
REÐ
PS401
T-T C.B
PICK UP ASSY
CN1
FROM CÐ MAIN C.B CON1
CON701
R720
R719
LEÐ701-703 (CÐ TRAY LIGHTING)
LEÐ701
LEÐ702
LEÐ703
LEÐ C.B

SCHEMATIC DIAGRAM


CD MAIN C.B
IC101
CXA1992AR
RF-AMP SIGNAL SERVO PROCESSOR
IC201
CXD2589Q
DIGITAL SERVO PROCESSOR
IC202
M51943AML
RESET
X201
16.934MHz
IC302 (1/2)
NJM2100L
IC302 (2/2)
NJM2100L
Q302
2SC2412
MUTE
Q301
2SC2412
MUTE
Q303
DTA114EK
MUTE SW
D MODEL
Q901
2SA1235F
LED DRIVER
LED901
SLZ-8128A-01-B
DIGITAL OUT (OPTICAL)
IC601
TA7291S
TRAY MOTOR DRIVER
M601
(TRAY MOTOR)
IC501
BA6897S
MOTOR COIL DRIVER
TRACKING
FOCUS
SPINDLE
SLED
Q501
2SA1015GR
REG. DRIVER
Q401 2SD2172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SD2172VW
Q405 DTC114TK
Q406 DTC114TK
Q401-406
DISH MOTOR DRIVER
Q101
2SA933S
Q701
DTC123JK
S601 OPEN
S602 UP
S603 SPPB61 DOWN
CON302
TO/FROM MAIN UNIT
CON301
TO/FROM MAIN UNIT
CON6
1 I-CLK
2 I-XTL
3 I-DATA
4 O-SENS
5 I-CD.LED
6 I-SQCLK
7 O-SQDATA
8 O-SW
9 I-CLOSE
10 I-OPEN
11 I-DISH.FWD
12 I-DISH.REV
13 O-DISH.SENS
14 I-VREF
15 A-MUTE
TO/FROM MAIN UNIT
CON5
1 VM (+12V)
2 D-GND
3 CD ON
4 R CH
5 A-GND
6 L CH
TO/FROM MAIN UNIT
CON7
CON701
LED C.B
LED0701
LED0702
LED0703
SEL1250SM
SEL1550CM
LED0701-703
(CD TRAY LIGHTING)
CON1
W2
CON2
CON3
CON8
TRACKING
FOCUS
PD IC
LD
OPTICAL PICK UP
KSS-213F
CD MECHANISM
3ZG-2 E2
DRIVE C B
M20 (SPINDLE) MOTOR
M21 (SLED) MOTOR
SW1 (INSIDE LIMIT SW)
T-T C.B
M401 (DISH MOTOR)
S401 (CLOSE SW)
PS401 SG-240
LED471 GL380
Q411 PT380F
(DISC DET. SENSOR)
TP-RF
TP-VC
TP-FGS
TP-TEO
TP-FEO
TP5

CD TEST MODE

< How to Enter the Test Mode >

While pressing the SLEEP&OPEN/CLOSE key, insert the AC power cord to AC wall outlet.

< When the Machine Has Entered the Test Mode >

The system is initialized and the main power is turned on. During the test mode, the main power of the CD block is turned on always. The test mode starts with the [Sled mode].

< Types of Test Mode >

[Sled mode]

All displays of the FL tubes light. The optical pickup can be moved by pressing [⟪] or [⟫]key.

Pressing the [▷] key establishes the [Play mode].

Pressing the [⟪] key moves the sled to outer circumference.
Pressing the [⟫] key moves the sled to inner circumference.
Pressing OPEN/CLOSE key opens or closes the tray.

[Play mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search (numbers of search is unlimited) is performed. When focus comes to in-focus, the focus servo is locked in and the machines enters the normal play mode.
During [Play mode], GFS and sound skipping are not monitored.
When focus becomes out-of-focus, another attempt is made to search for focus.
The tracking servo and the sled servo can be turned on and off by pressing the [▷] key.

Pressing the [□] key establishes the [Sled mode].
The [II] display can be turned on and off by pressing the [▷] key .

While the [II] display is turned off:
CLV-A Tracking servo: on
Sled servo: on
While the [II] display is turned on:
CLV-A Tracking servo: off
Sled servo: off

Pressing the [⟪] key decreases the track number to -1.
Pressing the [⟫] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

< How to Exit the Test Mode >

Remove the AC power cord from power outlet, or turn off the system power.

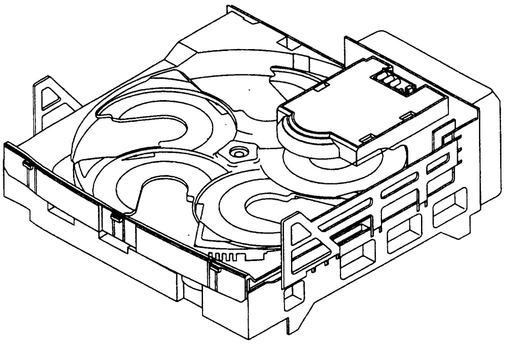
USE MODEL LIST

XC-30M
DX-Z9450
CX-NMT960
CX-ZR880
CX-ZR990
CX-ZR770
CX-ZR774
CX-NF959
CX-NF958
CX-ZR550
CX-NA959
CX-ZVR99
CX-ZVR80
CX-ZVR88
CX-NAVF960
CX-NMT960
CX-ZR700

aiwa

aiwa
SERVICE

6ZG-1
6ZG-1S
6ZG-1S1
6ZG-1VZ



CD MECHANISM

SERVICE MANUAL

• BASIC CD MECHANISM: 3ZG-2 C4N/C6N

• TYPE: English,Japanese

訂 正 版
CORRECTION

■ 6ZG-1/6ZG-1S/6ZG-1S1/6ZG-1VZ (S/M Code No. 09-975-198-00T) の記載に誤りがありますので訂正致します。

■ This Service Manual is the “CORRECTION” and replaces 6ZG-1/6ZG-1S/6ZG-1S1/6ZG-1VZ (S/M Code No. 09-975-198-00T).

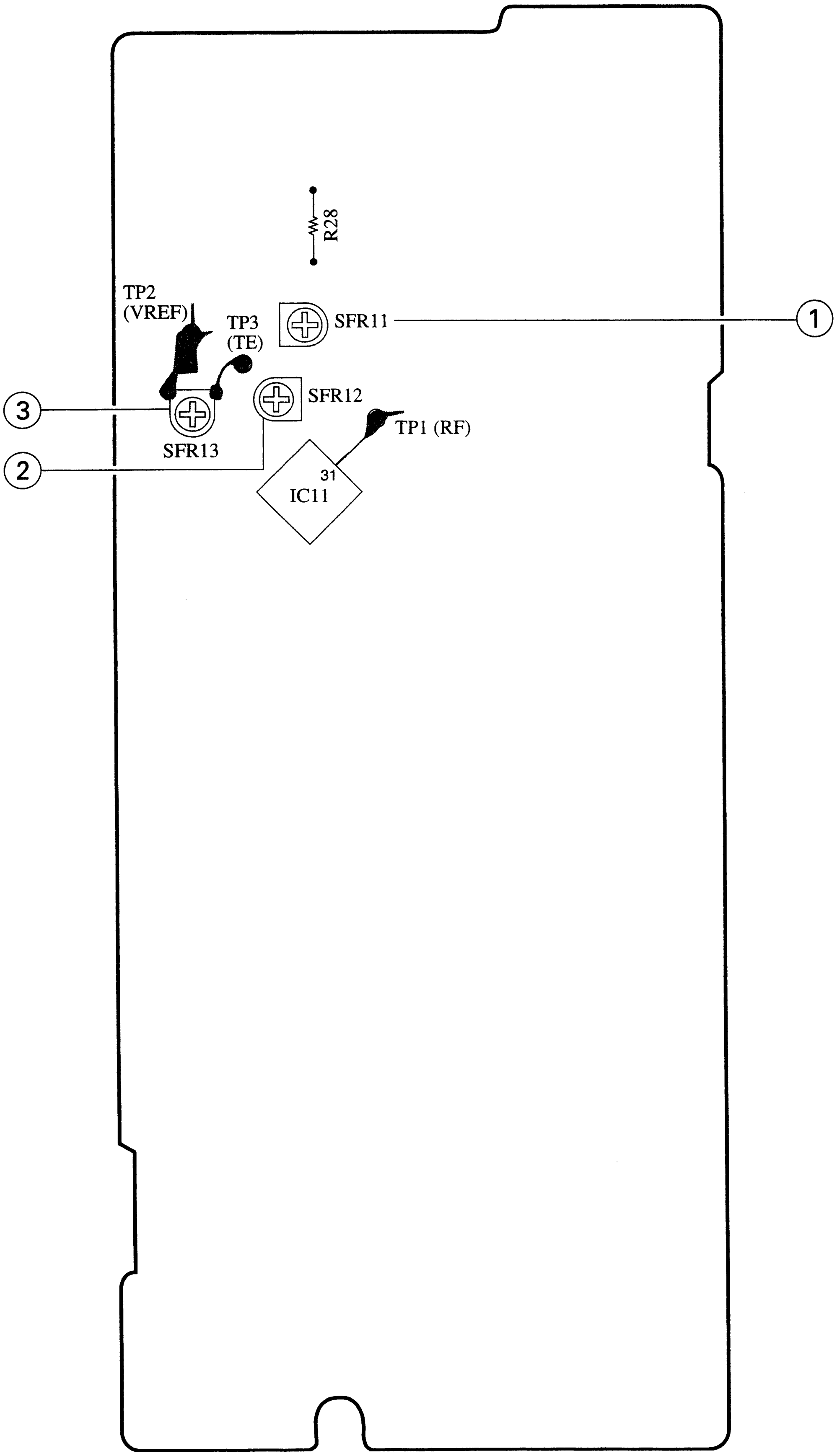
BASIC NAME		DERIVATION NAME					
6ZG-1	*1	D	F	–	–	–	–
	*2	D	F	G	–	V1	V2
	*3	D	F	–	P	V1	–
6ZG-1S		D	F	–	–	–	–
6ZG-1S1		D	F	–	–	–	–
6ZG-1VZ		D	F	–	–	–	–

■ 本体マニュアルはBASIC CD MECHANISMのサフィックがDERIVATION NAMEです。組み合わせて使用して下さい。

■ This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.

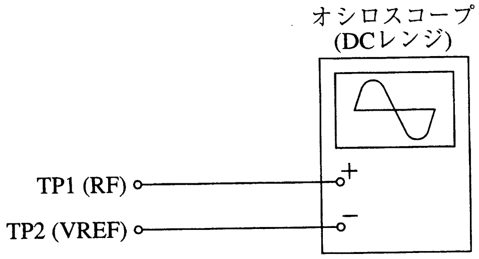
S/M Code No. 09-982-253-90T

CD MAIN C.B (PATTERN SIDE)

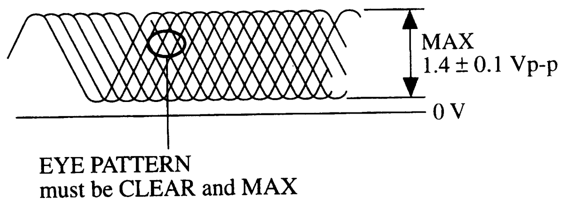

R28
TP2
(VREF)
TP3
(TE)
SFR11
①
SFR12
TP1 (RF)
③
SFR13
②
31
IC11

注意: ・(10: 1) のプローブを接続して、調整して下さい。
・各調整には、オシロスコープの⊖側をTP2 (VREF) に接続して下さい。

1. フォーカスバイアス調整
この調整は、光学系ブロックを交換修理した場合に調整すること。

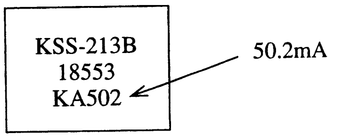

オシロスコープ
(DCレンジ)
TP1 (RF)
TP2 (VREF)
+
−

1) テストポイントTP1 (RF)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が最大となり、かつ中央のひし形が、鮮明になるようにSFR11を調整する。


MAX
1.4 ± 0.1 Vp-p
0 V
EYE PATTERN
must be CLEAR and MAX

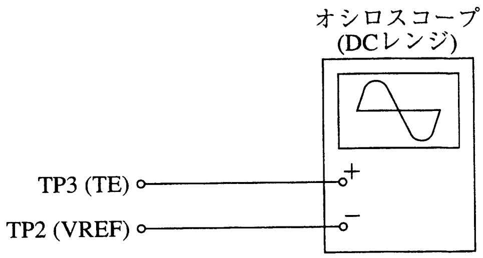
VOLT/DIV: 50mV
TIME/DIV: 0.5 μS

注意: レーザー電流の確認はR28 (10Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

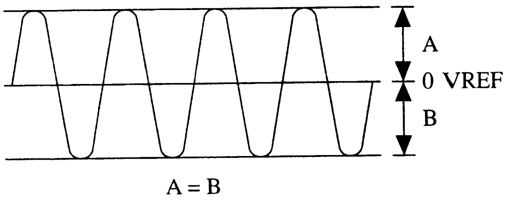

KSS-213B
18553
KA502
50.2mA

$$\text{レーザー電流Iop} = \frac{\text{R28の両端電圧}}{10\Omega}$$

2. トラッキング・バランス調整


オシロスコープ
(DCレンジ)
TP3 (TE)
TP2 (VREF)
+
−

1) テストポイントTP3 (TE)、TP2 (VREF) にオシロスコープを接続する。
2) CDテストモードを起動する。
3) テストディスクTCD-782 (YEDS-18) を入れて、▶PLAY状態にする。
4) PAUSEキーを押し、トラッキングサーボをOFFにする。
5) オシロスコープのトラバース波形が、下図のように上下対称になるようにSFR12を調整する。



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. トラッキングゲイン調整
この調整を正確に行うためには、サーボアナライザーが必要です。しかし、このゲインはマージンを持っているため、通常では少し位ずれていてもほとんど問題はありません。したがってこの調整は行わないで下さい。フォーカス/トラッキングゲインは2軸デバイス動作時の機械的雑音と機械的ショックに対するピックアップの追従性を決めています。しかし、これは互いに相反するため、両方を満足する点に調整してあります。

- ● ゲインを上げると2軸デバイス動作時の雑音が増加する。
- ● ゲインを下げると機械的ショックに弱くなり音飛びを起こしやすくなる。

そしてゲインの調整がずれていると次頁の様な症状が出ます。

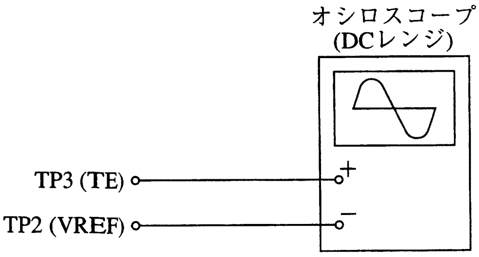
症状 ＼ ゲイン	(フォーカス)	トラッキング
● STOP→▶PLAY 時，又は自動選曲時 (⏮, ⏭ボタンを押したとき) に演奏が始まるまでの時間が長くなる。(通常は2秒位です。)	低い	低い 又は 高い
● STOP→▶PLAY 時，又は自動選曲時 (⏮, ⏭ボタンを押したとき) に演奏が始まらないでディスクが回転を続ける。	———	低い
● STOP→▶PLAY 時，しばらくすると回転が止まる。	低い又は高い	———
● 演奏中に音がとぎれる。又，タイムカウンターの表示が進まなくなる。	———	低い
● 2軸ディバイス動作時のノイズが多くなる。	高い	高い

なお、簡易調整として下記の方法があります。

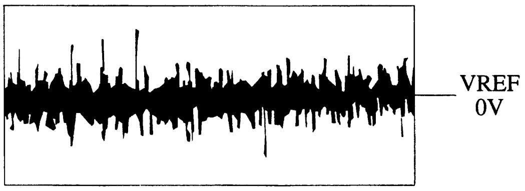
—— 簡易調整 ——

注意: 正確には調整できないため、調整を行う前にボリュームの位置を憶えておいて、簡易調整を行った後のボリュームの位置と比較して、そのずれが少ないときは元のボリュームの位置に戻しておいて下さい。

調整方法:



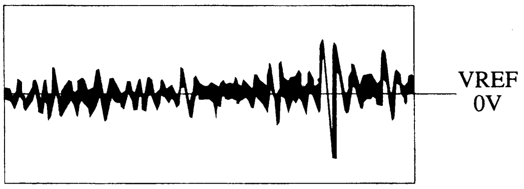
1. セットを水平に置く。
   (セットを水平に置かないと2軸デバイスが重力の影響を受け、調整出来ません。)
2. テストディスクTCD-782 (YEDS-18)を入れて2曲目を再生する。
3. オシロスコープをTP3 (TE)、TP2 (VREF) に接続する。
4. オシロスコープの波形が下図の波形になるようにSFR13を調整する。(トラッキングゲイン調整)



VOLT/DIV: 50mV
TIME/DIV: 1mS

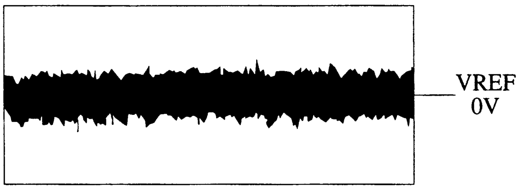
● 悪い例

トラッキングゲインが低い時
(調整されている波形と比べて基本波が表れるようになる。)



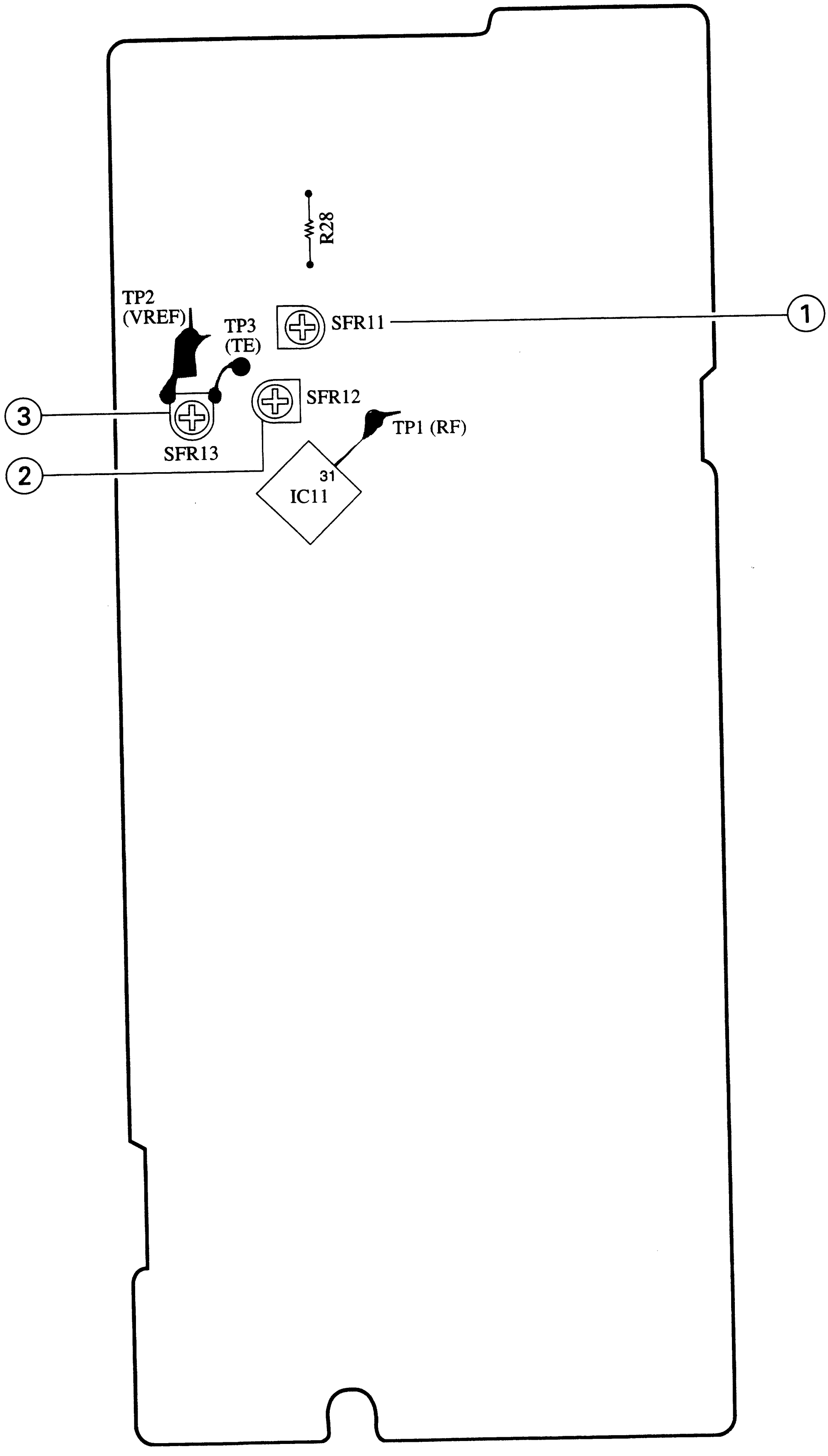
VOLT/DIV: 50mV
TIME/DIV: 1mS

トラッキングゲインが高い時
(ゲインが低い時と比べて基本波が高い)



VOLT/DIV: 50mV
TIME/DIV: 1mS

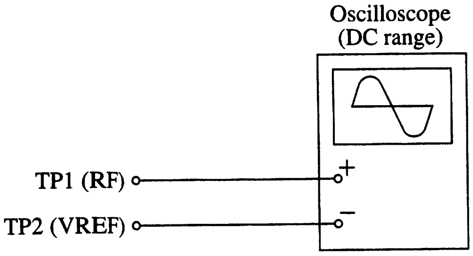
CD MAIN C.B (PATTERN SIDE)


R28
TP2
(VREF)
TP3
(TE)
SFR11
①
SFR12
③
SFR13
②
TP1 (RF)
31
IC11

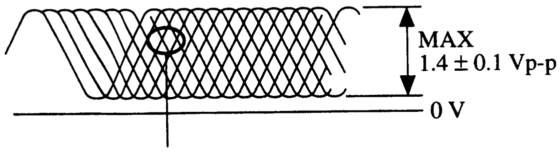
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.



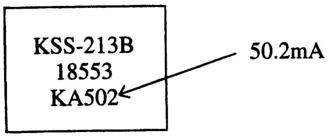
1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR11 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX

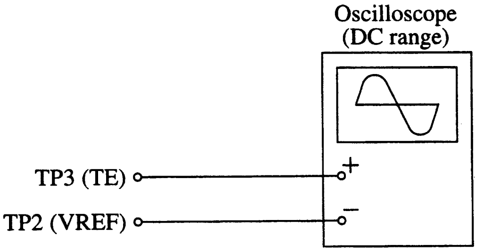
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R28 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

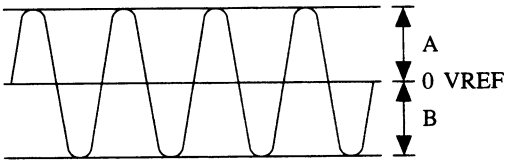


$$\text{Laser current Iop} = \frac{\text{Voltage across R28}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Start up the CD TEST mode.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Press the PAUSE key and turn OFF the tracking servo.
5) Adjust SFR12 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
When the gain adjustment is off, the symptoms below appear.

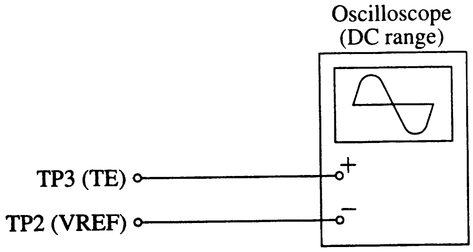
Symptoms \ Gain	(Focus)	Tracking
● The time until music starts becomes longer for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP →▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

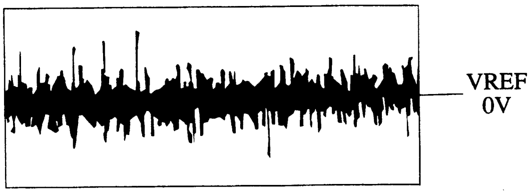
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



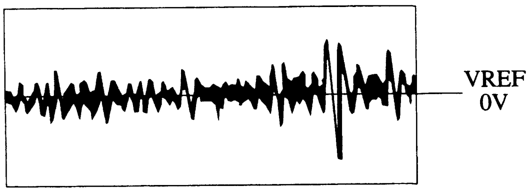
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF).
4) Adjust SFR13 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

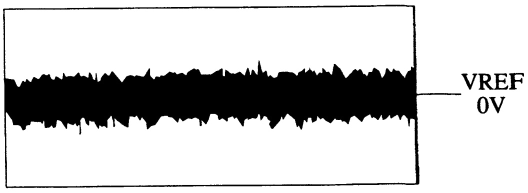
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



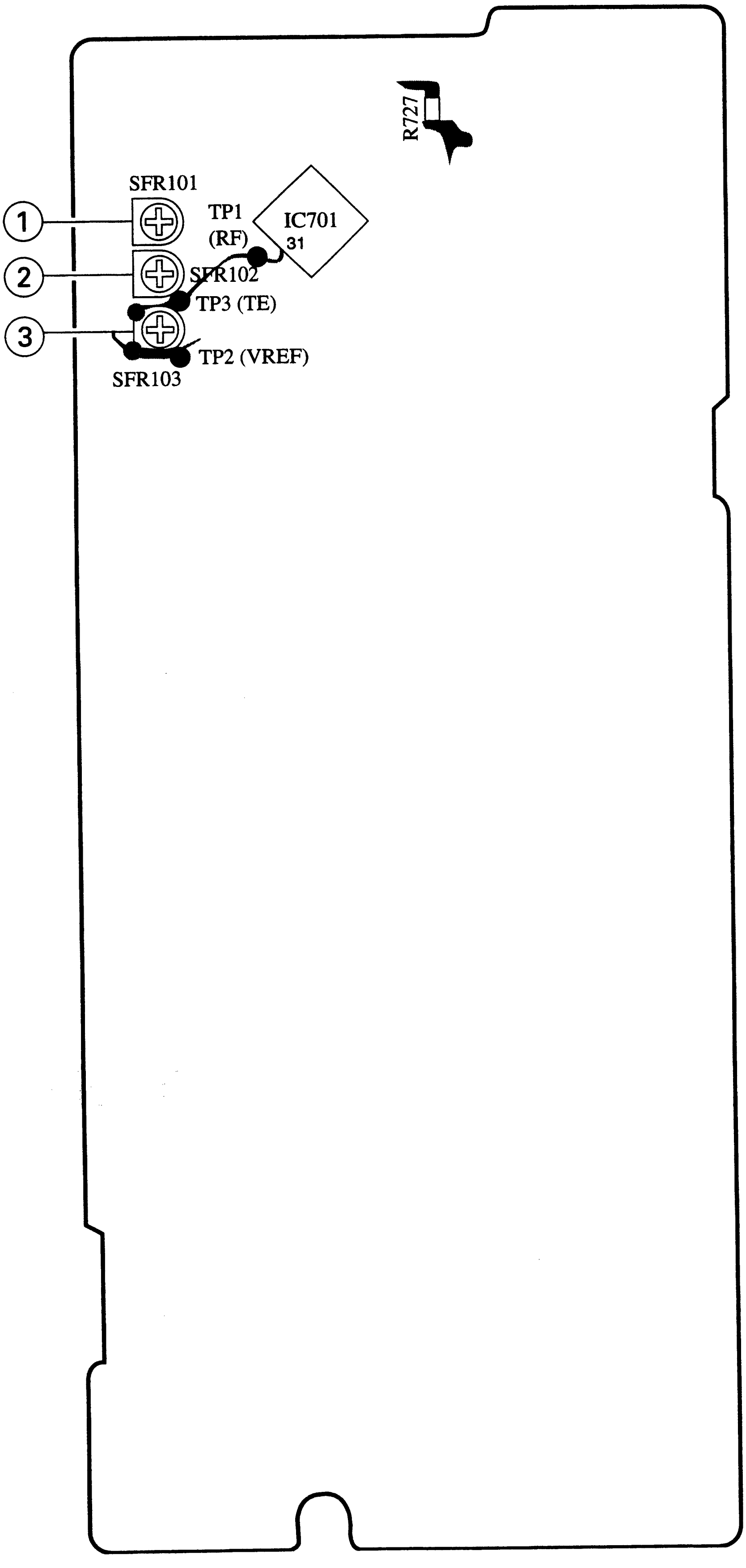
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



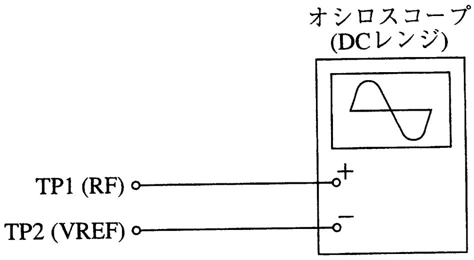
VOLT/DIV: 50mV
TIME/DIV: 1mS

VCD MAIN C.B (PATTERN SIDE)

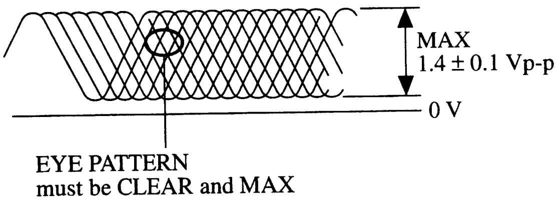

R727
SFR101
①
TP1
(RF)
IC701
31
②
SFR102
TP3 (TE)
③
TP2 (VREF)
SFR103

注意: ・ (10: 1) のプローブを接続して、調整して下さい。
・ 各調整には、オシロスコープの⊖側をTP2 (VREF) に接続して下さい。

1. フォーカスバイアス調整
この調整は、光学系ブロックを交換修理した場合に調整すること。

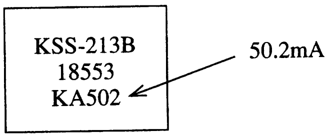

オシロスコープ
(DCレンジ)
TP1 (RF)
TP2 (VREF)
+
−

1) テストポイントTP1 (RF)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が最大となり、かつ中央のひし形が、鮮明になるようにSFR101を調整する。


MAX
1.4 ± 0.1 Vp-p
0 V
EYE PATTERN
must be CLEAR and MAX

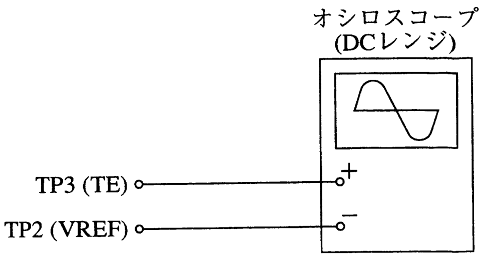
VOLT/DIV: 50mV
TIME/DIV: 0.5 μS

注意: レーザー電流の確認はR727 (10Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

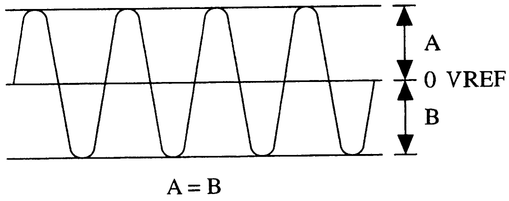

KSS-213B
18553
KA502
50.2mA

$$\text{レーザー電流Iop} = \frac{\text{R727の両端電圧}}{10\Omega}$$

2. トラッキング・バランス調整


オシロスコープ
(DCレンジ)
TP3 (TE)
TP2 (VREF)
+
−

1) テストポイントTP3 (TE)、TP2 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて、▶PLAY状態にする。
4) オシロスコープのトラバース波形が、下図のように上下対称になるようにSFR102を調整する。



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. トラッキングゲイン調整
この調整を正確に行うためには、サーボアナライザーが必要です。しかし、このゲインはマージンを持っているため、通常では少し位ずれていてもほとんど問題はありません。したがってこの調整は行わないで下さい。フォーカス/トラッキングゲインは2軸デバイス動作時の機械的雑音と機械的ショックに対するピックアップの追従性を決めています。しかし、これは互いに相反するため、両方を満足する点に調整してあります。

- ゲインを上げると2軸デバイス動作時の雑音が増加する。
- ゲインを下げると機械的ショックに弱くなり音飛びを起こしやすくなる。

そしてゲインの調整がずれていると次頁の様な症状が出ます。

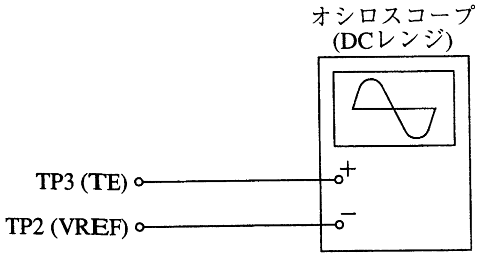
ゲイン 症状	(フォーカス)	トラッキング
● STOP→▶PLAY時，又は自動選曲時 (⏮,⏭ボタンを押したとき) に演奏が始まるまでの時間が長くなる。(通常は2秒位です。)	低い	低い 又は 高い
● STOP→▶PLAY時，又は自動選曲時 (⏮,⏭ボタンを押したとき) に演奏が始まらないでディスクが回転を続ける。	———	低い
● STOP→▶PLAY時，しばらくすると回転が止まる。	低い又は高い	———
● 演奏中に音がとぎれる。又，タイムカウンターの表示が進まなくなる。	———	低い
● 2軸ディバイス動作時のノイズが多くなる。	高い	高い

なお、簡易調整として下記の方法があります。

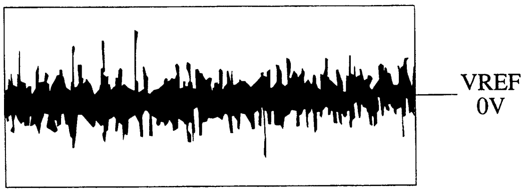
—— 簡易調整 ——

注意: 正確には調整できないため、調整を行う前にボリュームの位置を憶えておいて、簡易調整を行った後のボリュームの位置と比較して、そのずれが少ないときは元のボリュームの位置に戻しておいて下さい。

調整方法:



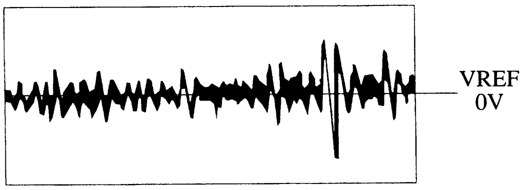
1. セットを水平に置く。
   (セットを水平に置かないと2軸デバイスが重力の影響を受け、調整出来ません。)
2. テストディスクTCD-782 (YEDS-18)を入れて2曲目を再生する。
3. オシロスコープをTP3 (TE)、TP2 (VREF) に接続する。
4. オシロスコープの波形が下図の波形になるようにSFR103を調整する。(トラッキングゲイン調整)



VOLT/DIV: 50mV
TIME/DIV: 1mS

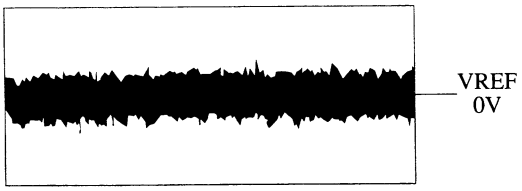
● 悪い例

トラッキングゲインが低い時
(調整されている波形と比べて基本波が表れるようになる。)



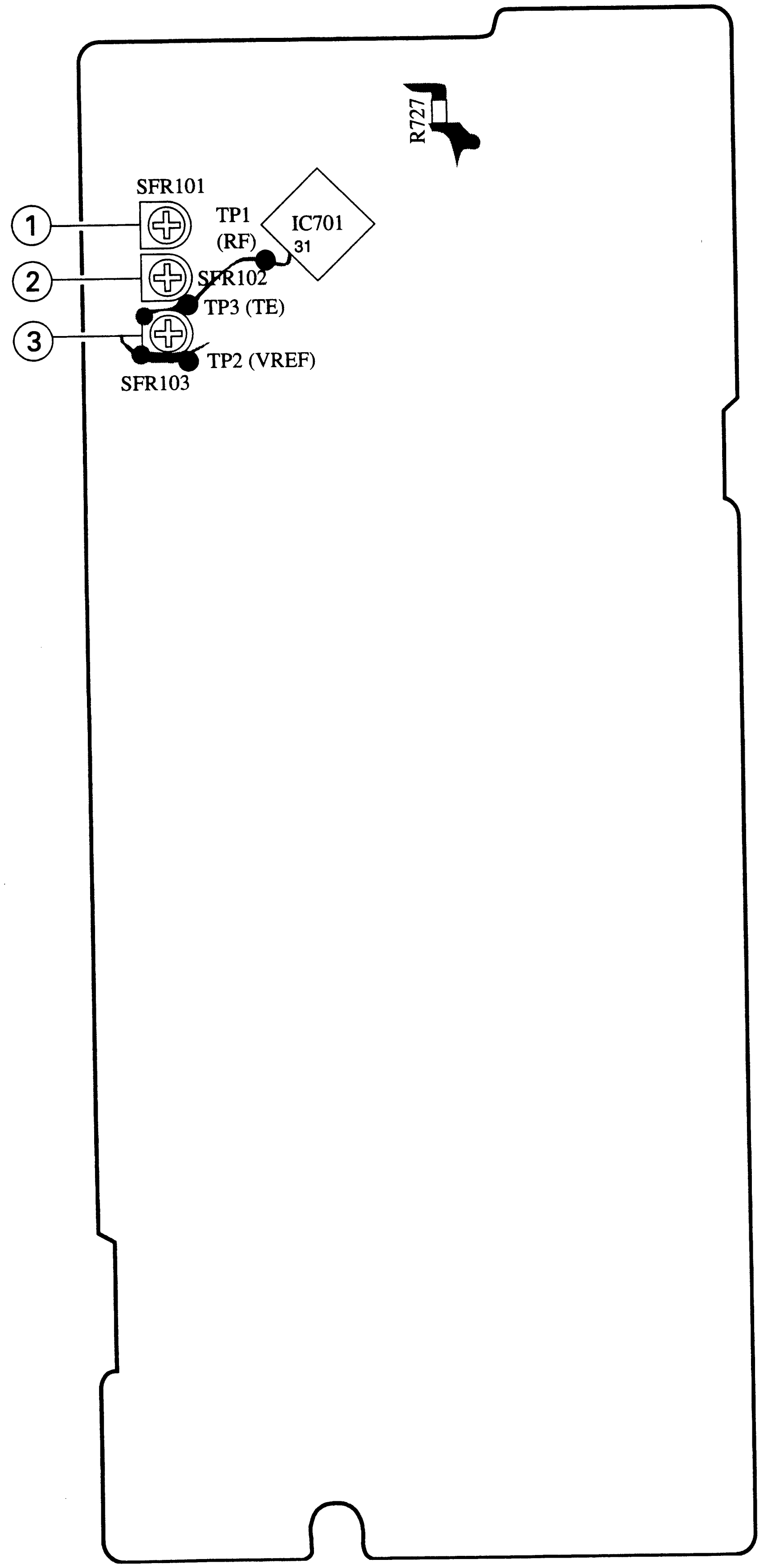
VOLT/DIV: 50mV
TIME/DIV: 1mS

トラッキングゲインが高い時
(ゲインが低い時と比べて基本波が高い)



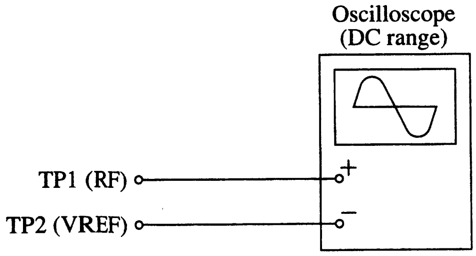
VOLT/DIV: 50mV
TIME/DIV: 1mS

VCD MAIN C.B (PATTERN SIDE)

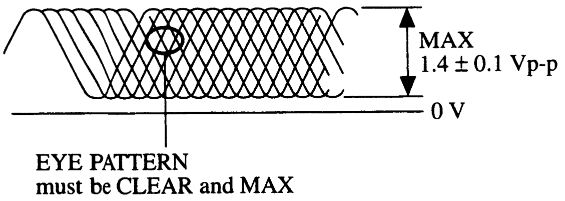

R727
SFR101
①
TP1
(RF)
IC701
31
②
SFR102
TP3 (TE)
③
TP2 (VREF)
SFR103

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.

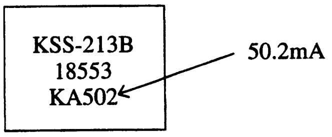


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR101 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



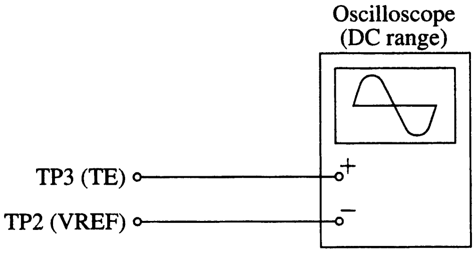
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R727 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

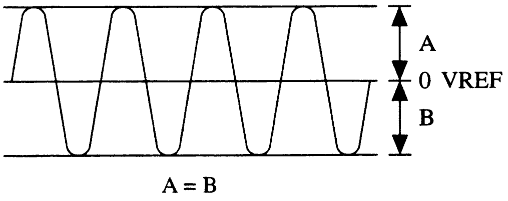


$$\text{Laser current Iop} = \frac{\text{Voltage across R727}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR102 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
When the gain adjustment is off, the symptoms below appear.

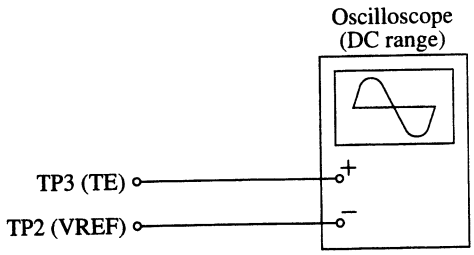
Gain / Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	———	low
● Disc stops to rotate shortly after STOP →▶PLAY.	low or high	———
● Sound is interrupted during PLAY. Or time counter display stops.	———	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

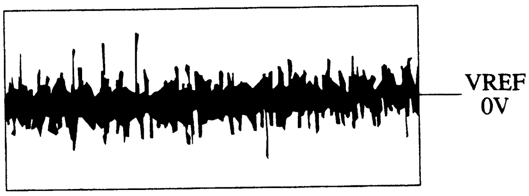
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



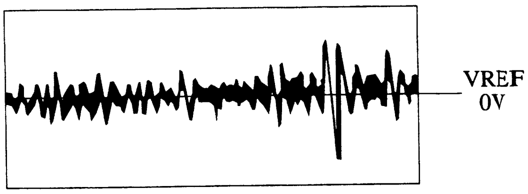
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF).
4) Adjust SFR103 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

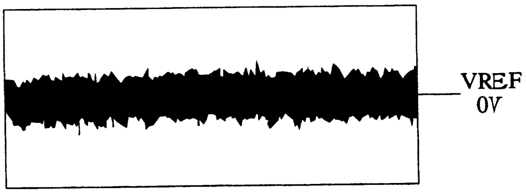
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



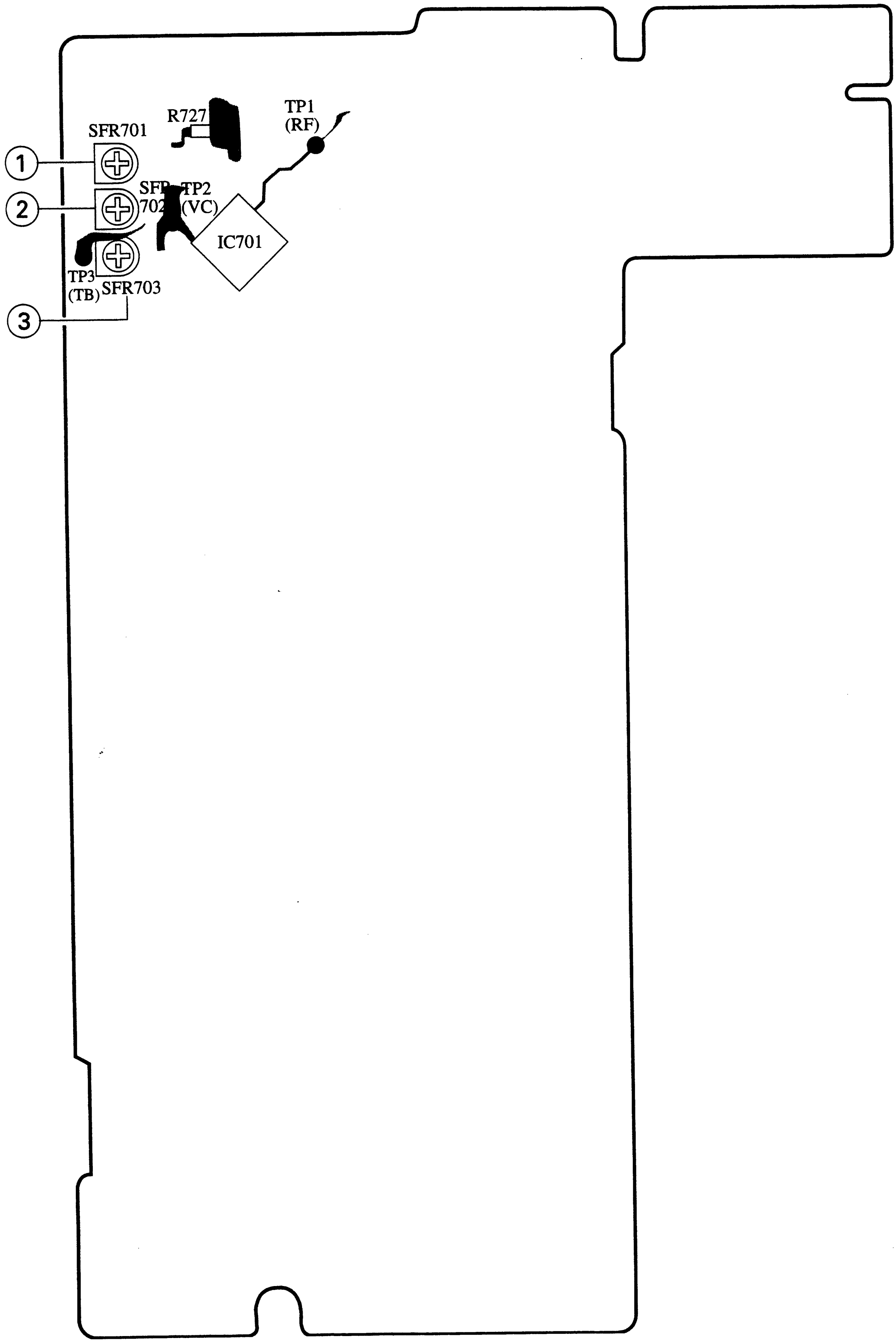
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



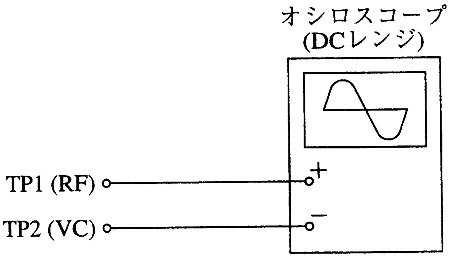
VOLT/DIV: 50mV
TIME/DIV: 1mS

VCD MAIN C.B (PATTERN SIDE)

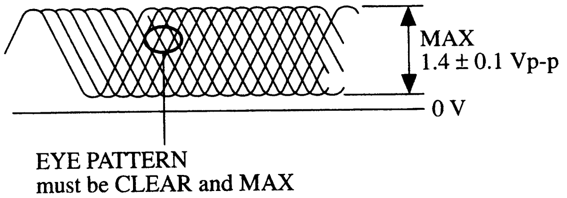

R727
TP1
(RF)
SFR701
①
SFR
702
TP2
(VC)
②
IC701
TP3
(TB)
SFR703
③

注意: ・(10: 1) のプローブを接続して、調整して下さい。
・各調整には、オシロスコープの⊖側をTP2 (VC) に接続して下さい。

1. フォーカスバイアス調整
この調整は、光学系ブロックを交換修理した場合に調整すること。

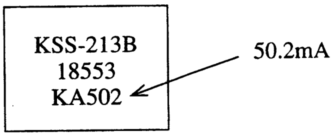

オシロスコープ
(DCレンジ)
TP1 (RF)
TP2 (VC)
+
−

1) テストポイントTP1 (RF)、TP2 (VC) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が最大となり、かつ中央のひし形が、鮮明になるようにSFR701を調整する。


MAX
1.4 ± 0.1 Vp-p
0 V
EYE PATTERN
must be CLEAR and MAX

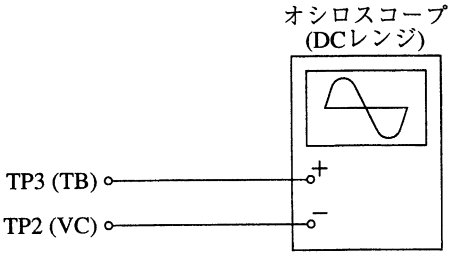
VOLT/DIV: 50mV
TIME/DIV: 0.5 μS

注意: レーザー電流の確認はR727 (10Ω の両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

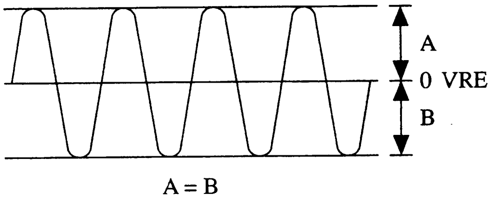

KSS-213B
18553
KA502
50.2mA

$$\text{レーザー電流}Iop = \frac{\text{R727の両端電圧}}{10\Omega}$$

2. トラッキング・バランス調整


オシロスコープ
(DCレンジ)
TP3 (TB)
TP2 (VC)
+
−

1) テストポイントTP3 (TB)、TP2 (VC) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて、▶PLAY状態にする。
4) オシロスコープのトラバース波形が、下図のように上下対称になるようにSFR702を調整する。



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. トラッキングゲイン調整
この調整を正確に行うためには、サーボアナライザーが必要です。しかし、このゲインはマージンを持っているため、通常では少し位ずれていてもほとんど問題はありません。したがってこの調整は行わないで下さい。フォーカス/トラッキングゲインは2軸デバイス動作時の機械的雑音と機械的ショックに対するピックアップの追従性を決めています。しかし、これは互いに相反するため、両方を満足する点に調整してあります。

- ● ゲインを上げると2軸デバイス動作時の雑音が増加する。
- ● ゲインを下げると機械的ショックに弱くなり音飛びを起こしやすくなる。

そしてゲインの調整がずれていると次頁の様な症状が出ます。

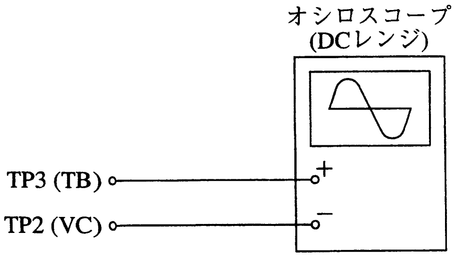
ゲイン 症状	(フォーカス)	トラッキング
● STOP →▶PLAY 時，又は自動選曲時 (⏮, ⏭ ボタンを押したとき) に演奏が始まるまでの時間が長くなる。(通常は2秒位です。)	低い	低い 又は 高い
● STOP →▶PLAY 時，又は自動選曲時 (⏮, ⏭ ボタンを押したとき) に演奏が始まらないでディスクが回転を続ける。	———	低い
● STOP →▶PLAY 時，しばらくすると回転が止まる。	低い又は高い	———
● 演奏中に音がとぎれる。又，タイムカウンターの表示が進まなくなる。	———	低い
● 2軸ディバイス動作時のノイズが多くなる。	高い	高い

なお、簡易調整として下記の方法があります。

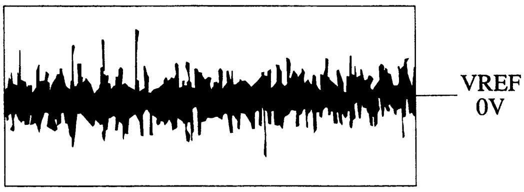
—— 簡易調整 ——

注意: 正確には調整できないため、調整を行う前にボリュームの位置を憶えておいて、簡易調整を行った後のボリュームの位置と比較して、そのずれが少ないときは元のボリュームの位置に戻しておいて下さい。

調整方法:



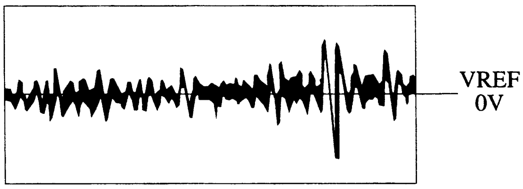
1. セットを水平に置く。
   (セットを水平に置かないと2軸デバイスが重力の影響を受け、調整出来ません。)
2. テストディスクTCD-782 (YEDS-18)を入れて2曲目を再生する。
3. オシロスコープをTP3 (TB)、TP2 (VC) に接続する。
4. オシロスコープの波形が下図の波形になるようにSFR703を調整する。(トラッキングゲイン調整)



VOLT/DIV: 50mV
TIME/DIV: 1mS

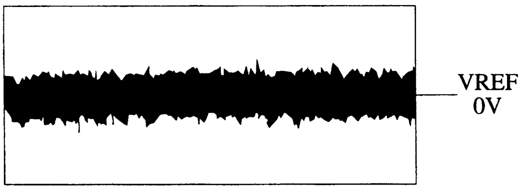
● 悪い例

トラッキングゲインが低い時
(調整されている波形と比べて基本波が表れるようになる。)



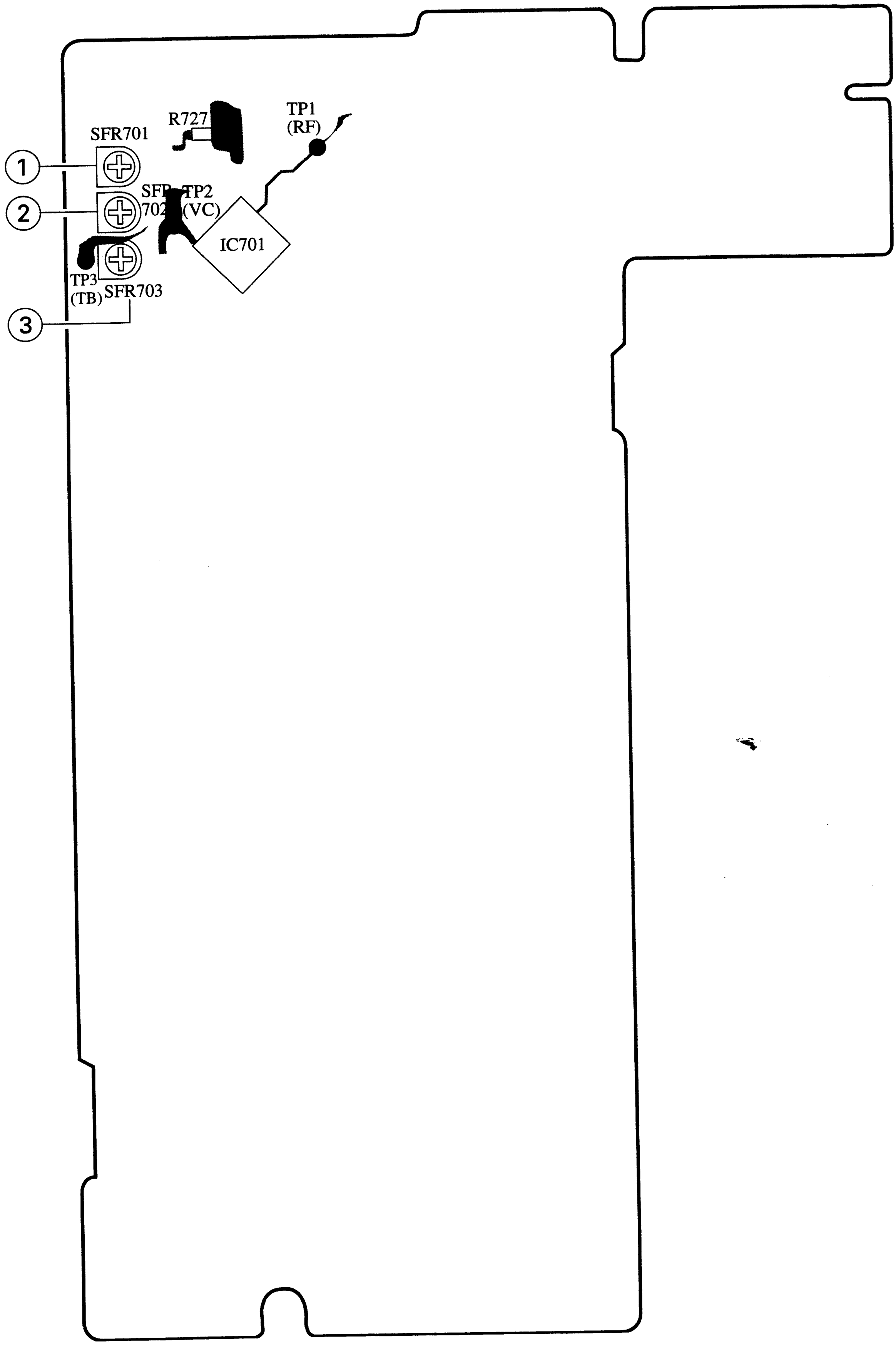
VOLT/DIV: 50mV
TIME/DIV: 1mS

トラッキングゲインが高い時
(ゲインが低い時と比べて基本波が高い)



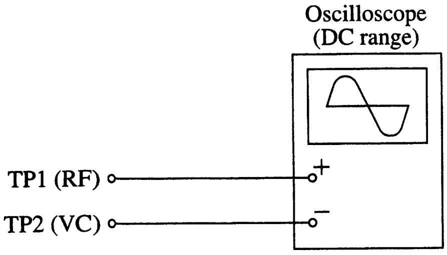
VOLT/DIV: 50mV
TIME/DIV: 1mS

VCD MAIN C.B (PATTERN SIDE)

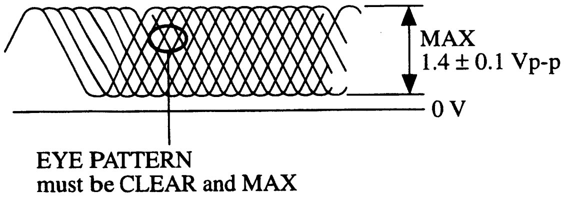

R727
TP1
(RF)
SFR701
①
②
SFR
702
TP2
(VC)
IC701
TP3
(TB)
SFR703
③

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VC).

1. Focus Bias Adjustment
   Make the focus bias adjustment when replacing and repairing the optical block.

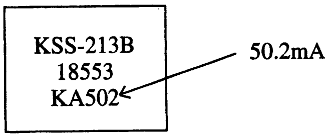


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VC).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR701 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



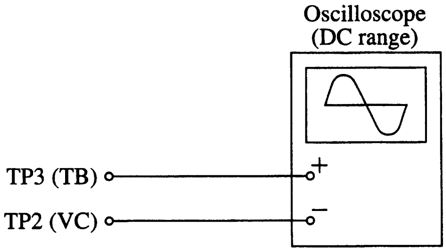
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R727 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

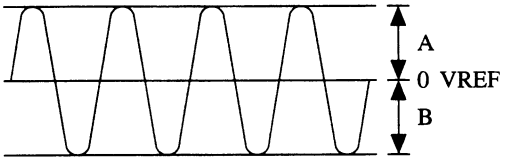


$$\text{Laser current Iop} = \frac{\text{Voltage across R727}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TB) and TP2 (VC).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR702 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



A = B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
  When the gain adjustment is off, the symptoms below appear.

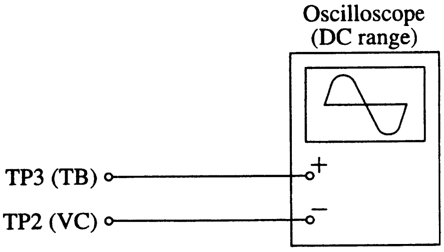
Symptoms \ Gain	(Focus)	Tracking
● The time until music starts becomes longer for STOP → ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP →▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

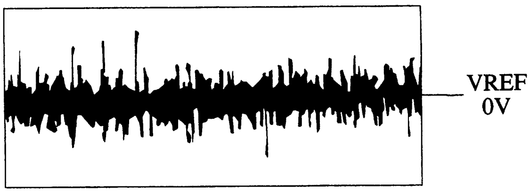
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



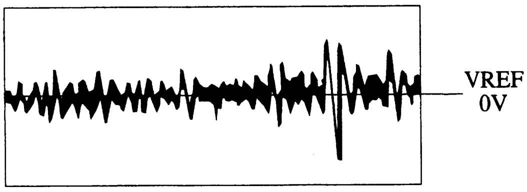
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TB), TP2 (VC).
4) Adjust SFR703 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

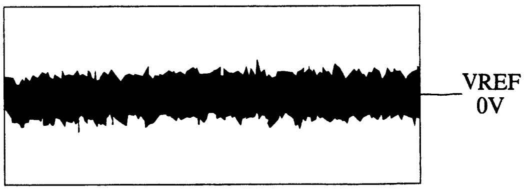
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

MODEL NO. 6ZG-1S/S1 (D, F)

TEST MODE

1. CDテストモードの起動方法
   CD釦 (CDファンクション) を押しながら､ACプラグを挿入する。
   上記により、FL管が「TEST」表示しテストモードが起動します。

2. CDテストモードの解除方法
   パワー釦を押す事で解除します。

3. CDテストモードの機能説明
   テストモード起動後､各操作釦を押す事により下記の確認が行えます。

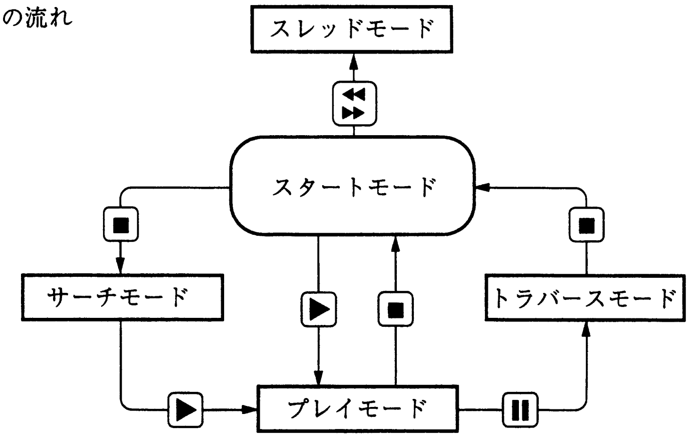
Mode	操作	FL表示	動作	内容
スタートモード	起動	TEST	・TEST MODE起動 ・LASER DIODE常時発光 (CDブロック電源ON)	・CDブロックPOWER ON ・APC回路確認 ・レーザー電流測定
サーチモード	■釦	CD	・連続フォーカスサーチ (PUレンズがフルスイングを繰り返す) *注2	FOCUS SERVO ・フォーカスサーチ波形確認 ・フォーカスエラー波形確認 (DISCの有無、FOKは監視せず。)
プレイモード	▶II釦	時間表示	・通常再生 ・TOC READ出来ない場合にはフォーカスサーチを連続する。 *注2	・FOCUS SERVO/TRACKING SERVO ・CLV SERVO/SLED SERVO ・FOK/FZC確認
	CD釦	F ****	・自動調整値表示	・F.B/T.B/T.G調整値確認
トラバースモード	▶II釦	時間表示	・トラッキングサーボ OFF/ON DISCをPLAY後、「▶II」を押す度にOFF/ONを繰り返す。 *注3	・TRACKING/SLED・ SERVO OFF ・トラッキングバランス (ラジアルバランス) 確認
スレッドモード (Sledモード)	◀◀釦 ▶▶釦	TEST	・ピックアップ外周へ移動 ・ピックアップ内周へ移動 (CD PLAY中は通常動作) *注1	・SLED SERVO ・SLED動作確認 ・INSIDE LIMIT SW確認

*注1 ピックアップが最内周／最外周の位置でも、『▶▶』または『◀◀』釦を押している間は、スレッドモータが回転する為、ギヤ破損に注意して下さい。またTEST MODEでのスレッド動作は、通常動作とは異なり、『◀◀』釦で外周・『▶▶』釦で内周方向に移動します。

*注2 フォーカスサーチを連続して10分以上動作し続けるとドライバーIC (IC501) が発熱し保護回路が働く為、トラッキングサーボがかからない状態となる場合があります。この様な場合には、電源を切り約10分間放熱後、再スタートして下さい。

*注3 トラッキングサーボがOFFの状態で『▶▶』または『◀◀』釦を押した場合は、トラッキングサーボをONに戻した時に再生出来ません。この様な操作を行った場合には、『■』釦を押しスタートモードに戻して下さい。

4. 操作概要
   右図の様にスタートモードから、矢印方向の流れで各モードの操作が行えます。モード変更は、右図の流れに従い行って下さい。

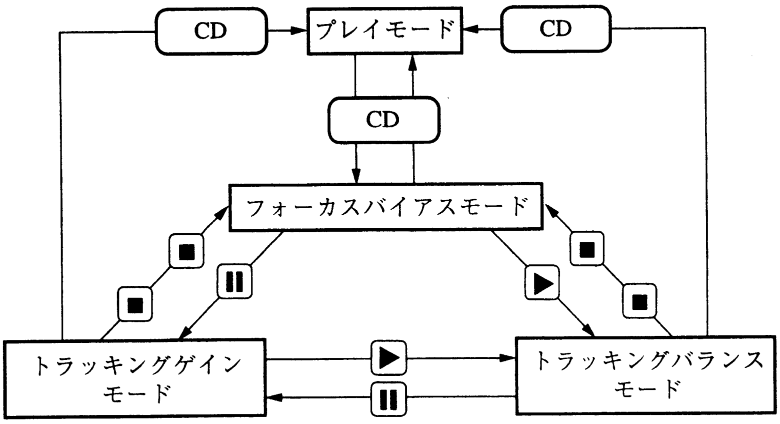


5. 自動調整値表示

当機種は、プレイスタート時にフォーカスバイアス、トラッキングバランス、トラッキングゲインの調整を自動で行います。テストモードを使うと、各調整値がFL表示されます。又、マニュアルで調整値を変更できます。

確認方法

① プレイモードから、CD釦を押すと、フォーカスバイアスモードに入ります。
② プレイ、ストップ、ポーズ釦を押す事により、各モードに切り替わります。
③ 各モードで、▶▶ ◀◀釦を押すと、調整値を変更できます。
④ 各モードからCD釦を押すと、プレイモードに戻ります。
* マニュアルで変更した調整値は、次にプレイした時に解除されます。


CD
プレイモード
CD
CD
フォーカスバイアスモード
■
■
II
▶
■
■
トラッキングゲイン モード
▶
II
トラッキングバランス モード

FL表示

下記の様にFLに表示され、切り換えステップは、各モードにより異なります。

- フォーカスバイアス .... F_ _ _*H** (** .... 0〜63、64ステップ)
- トラッキングバランス .... B_H_H_** (** .... 0〜15、16ステップ)
- トラッキングゲイン .... G_H_L** (** .... 0〜15、16ステップ)

1. How to Activate the CD Test Mode
   While pressing CD button (CD function), insert the AC plug. Then the FL display tube indicate "TEST" and the test mode starts up.

2. How to Cancel the Test Mode
   Press the POWER button to cancel the Test mode.

3. CD Test Mode Functions
   When the test mode is activated, the following mode functions can be used by pressing the respective operation keys.

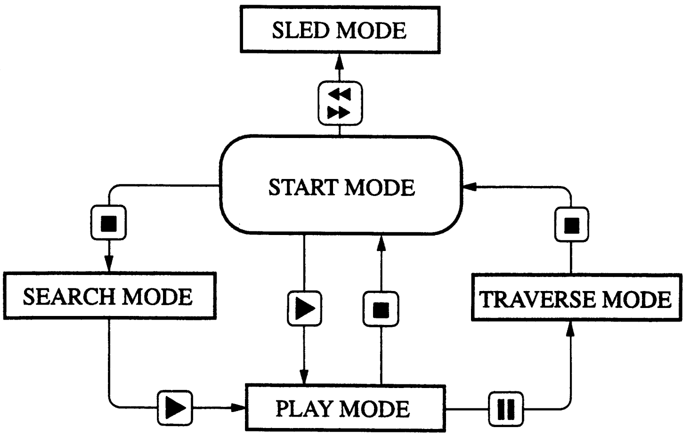
Mode	Operation	FL display	Operation	Contents
Start mode	Starting up	TEST	• The test mode starts up. • Laser diode turns on all the time. (CD block power is turned on.)	• CD block power is turned on. • APC circuit is checked. • Laser current is measured.
Search mode	■ button	CD	• Continuous focus search (The pickup lens repeats the full swing.) * Note 2	FOCUS SERVO • Focus search waveform check • Focus error waveform check (Presence/absence of disk, and FOK are not checked.)
Play mode	▶II button	Time and hours display	• Normal playback • When TOP cannot be read, the focus search is continued. * Note 2	• FOCUS SERVO/TRACKING SERVO • CLV SERVO/SLED SERVO • FOK/FZC check
	CD button	F ****	• Automatic adjustment values are shown.	• F.B/T.B/T.G adjustment values can be checked.
Traverse mode	▶II button	Time and hours display	• Tracking servo OFF/ON After playback of disc, tracking servo OFF/ON is repeated whenever ▶II is pressed. * Note 3	• TRACKING/SLED • SERVO OFF • Tracking balanced (radial balanced) check
Sled mode	◀◀ button ▶▶ button	TEST	• Pickup moves to outer circumference. • Pickup moves to inner circumference. (Normal operation during CD playback) * Note 1	• SLED SERVO • SLED operation check • Inside limit switch check

* Note 1 Even when the pickup is located in the innermost or the outer mode position, be careful not to damage the gear because the slid motor rotates while the ▶▶ button or the ◀◀ button is being pressed. The sled operation in the test mode is different from the normal operation that the optical pickup moves to the outer circumference when the ▶▶ ← ◀◀ button is pressed and the optical pickup moves to the inner circumference when the ▶▶ → ◀◀ button is pressed.

* Note 2 When the focus search is kept operated for 10 minutes or longer continuously, there can be a case that tracking servo cannot lock in because the driver IC (IC501) heats up and the protection circuit is activated. When this trouble occurs, turn off the main power and cool down for about ten minutes, and re-start the machine.

* Note 3 When the ▶▶ → ◀◀ or the ▶▶ ← ◀◀ button is pressed while the tracking servo is off, the normal playback cannot be performed even the tracking servo is turned on again. When this trouble occurs, press the ■ button to return to the start mode.

4. Outline of Operation
   Each mode can be established in the direction of the arrow starting from the START mode as shown in the right.



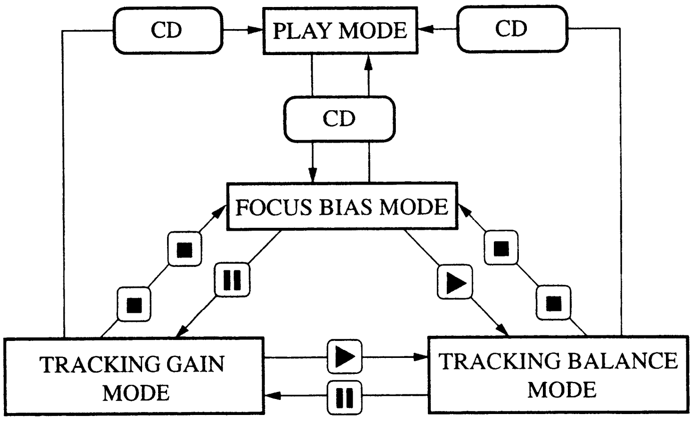
5. Automatic Adjustment Value Indication

All of the focus bias, tracking balance and tracking gain adjustments are automatically performed in this model when the PLAY mode is started.

The adjustment values of the respective modes can be shown on the FL display when the test mode is used. These adjustment values can be changed manually too.

Check procedure

① Machine enters the focus bias mode when CD button is pressed from the PLAY mode.
② The respective modes can be selected by pressing the PLAY or STOP or PAUSE button.
③ The adjustment values can be changed by pressing the ▸▸ → ◂◂ or ▸▸ ← ◂◂ button in the respective modes.
④ Machine returns to the PLAY mode when CD button is pressed in the respective modes.
* The adjustment values that are changed manually, return to the preset values when the machine enters the PLAY mode next time.



FL Display

The following messages appear on the FL display. The messages are different in each mode.

- Focus bias .... F_ _ _*H** (** ..... 0-63, 64 steps)
- Tracking balance .... B_H_H_** (** ..... 0-15, 16 steps)
- Tracking gain .... G_H_L** (** ..... 0-15, 16 steps)

サービス技術ニュース	
番号	連絡内容
G—　—	
G—　—	
G—　—	

アイワ株式会社
AIWA CO.,LTD.

912162

Tokyo Japan

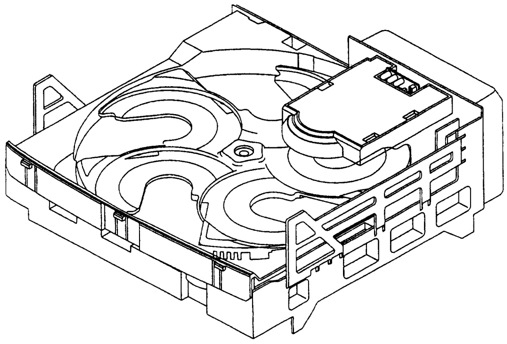
〒110-8710 東京都台東区池之端1-2-11 ☎03（3827）3111（代表）

aiwa

aiwa SERVICE

6ZG-1
6ZG-1S
6ZG-1S1
6ZG-1VZ

SERVICE MANUAL



CD MECHANISM

- BASIC CD MECHANISM: 3ZG-2 C4N/C6N
- TYPE: English,Japanese

CORRECTION

BASIC NAME		DERIVATION NAME					
6ZG-1	*1	D	F	–	–	–	–
	*2	D	F	G	–	V1	V2
	*3	D	F	–	P	V1	–
6ZG-1S		D	F	–	–	–	–
6ZG-1S1		D	F	–	–	–	–
6ZG-1VZ		D	F	–	–	–	–

- ■ This Service Manual is replaces “CORRECT Manual”(S/M Code No.09-975-198-00T).
- ■ 本体マニュアルは(S/M Code No.09-975-198-00T)の訂正版です。

S/M Code No. 09-983-260-40T

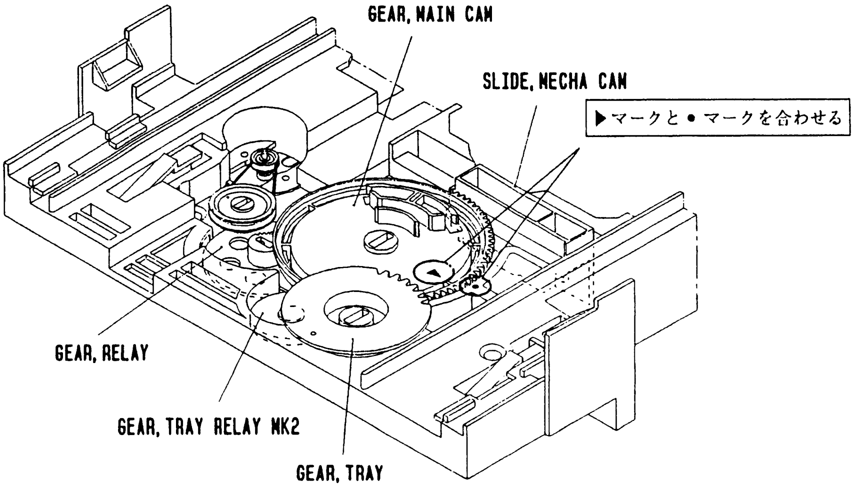
DISASSEMBLY INSTRUCTIONS

- "ギヤ、メインカムの位相の合わせ方" は記載の誤りですので訂正します。この調整は不用です。(p.10)

ギヤ、メインカムの位相の合わせ方

1) CHAS, MECHのツメを下側に押し、TRAYを外す。
2) 下図の様にGEAR, MAIN CAMの矢印とCHAS, MECHAの点印を合わせる。
3) SLIDE, MECH CAMが右側の位置にある事を確認し、TRAYをゆっくり挿し込んで下さい。

注意: GEAR, MAIN CAMの位相がズレている場合、チャッキング及びトレーが誤動作を起こします。


GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

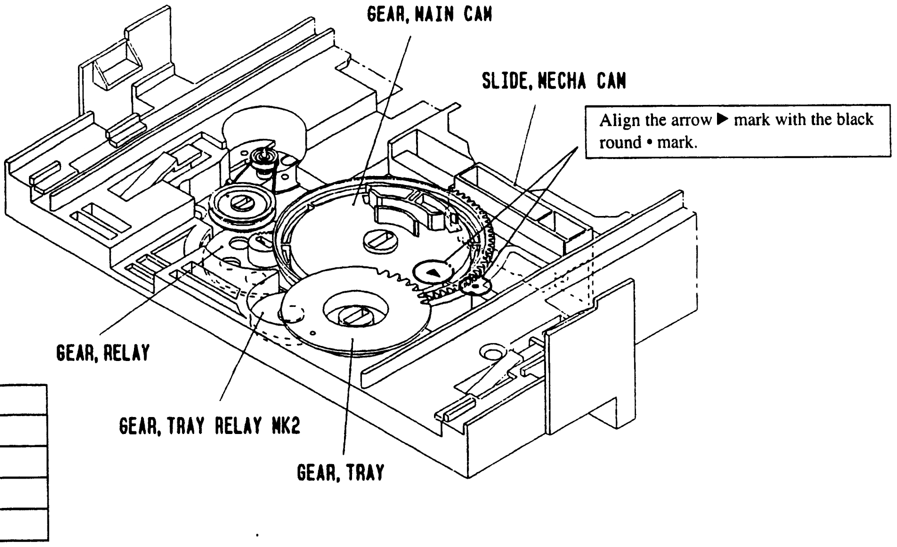
▶マークと●マークを合わせる

- There are errors in "How to Adjust the Rotating Phase of the Gear, Main Cam", and are corrected that this adjustment is no longer necessary. (p.13)

How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH. and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.


GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

Align the arrow ▶ mark with the black round • mark.

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

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aiwa
EURO SERVICE

Aiwa-Platz 1
aiwa
DIGITAL AUDIO & VIDEO

Service Information
SI-97-020-025

Hürth,den 22.08.1997

Modell: 6ZG- 2 Mechanik (MD- Mechanik)

Problem: Disc Error wird angezeigt, oder es ist ein schleifendes Geräusch zu hören (im MD- Betrieb).

Symptom: Bei Geräten mit genannter Mechanik können folgende Probleme auftreten:
- Nach Einlegen der Disc wird „Disc- Error" angezeigt und die Disc wird ausgeworfen.
- Beim Einlesen oder bei Wiedergabe berühnt die Disc die Mechanik und ein schleifendes Geräusch ist hörbar.

Werden diese Symptome vom Kunden beanstandet, muß folgende Modifikation durchgeführt werden.

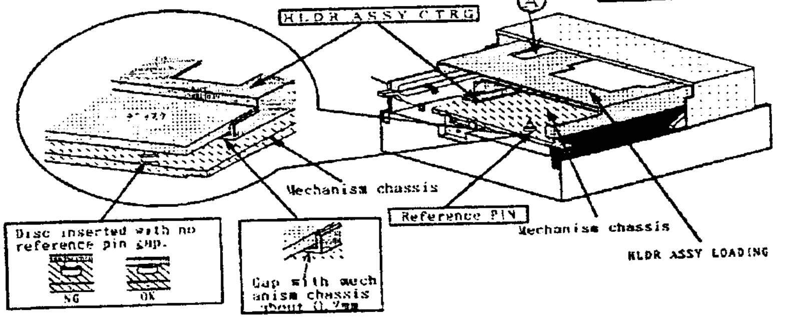
Abhilfe: Prüfen Sie bitte Folgendes:
1.) Hebt sich die Disc nach dem einlegen vom Referenz Pin
2.) Arbeitet die Lademechanik weiter, auch wenn keine Disc eingelegt ist?
3.) Ist der HLDR ASSY CTRG 1mm oder mehr oberhalb des Chassis?

In diesen Fällen muß unten aufgeführtes Teil gewechselt werden. Normalerweise beträgt der Abstand zwischen HLDR ASSY CTRG und der Mechanik ca. 0,2 mm. Der Abstand kann allerdings bis zu 0,5 mm betragen, ohne das Fehlfunktionen auftreten.

A.) Wird obengenanntes Teil erneuert, muß der SPR- E Lever Shutter nicht beigefügt werden.

B.) Die Höhe des beweglichen Hebels (tritt oben durch den HLDR ASSY CTRG hervor) ist zwischen altem und neuem Teil unterschiedlich. Deshalb kommt der Knopf in Kontakt mit HLDR ASSY LOADING und der HLDR ASSY Loading kann nicht befestigt werden. Wird HLDR ASSY erneuert, muß der HLDR ASSY LOADING ebenfalls erneuert werden, wenn er nicht, wie beschrieben, ein rechteckiges Loch an Punkt A besitzt.

ET Nr.	ET Name
86-ZG2-202-910	HLDR ASSY CTRG
86-ZG2-250-410	HLDR ASSY LOADING



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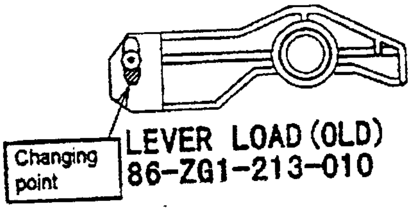
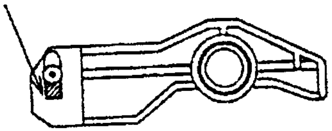
Service Information
SI-97-031-029

Hürth,den 07.10.1997

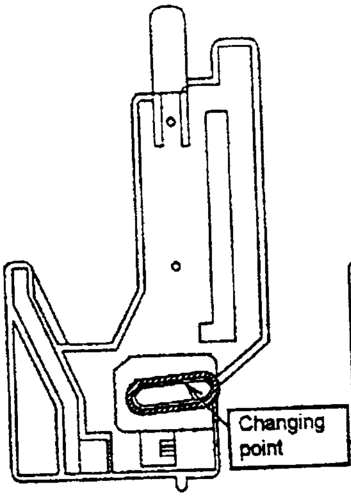
Modell:	Mechanik 6 ZG- 1
Problem:	5 CD Mechanik, Lever Load bricht.
Inhalt:	Ist der Lever Load beschädigt muß folgende Abhilfe durchgeführt werden.
Abhilfe:	Der Slider Load muß muß zusammen mit dem Lever Load erneuert werden. Der neue Lever Load ist mechanisch anders aufgebaut, so daß beide Teile getauscht werden müssen. Die Endnummern der beiden Teile unterscheiden sich, so daß auf die richtige Nummer geachtet werden muß!!!



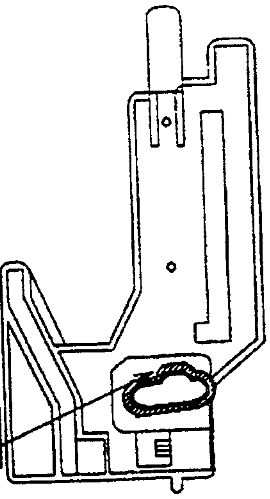
LEVER LOAD (OLD)
86-ZG1-213-010



LEVER LOAD (NEW)
86-ZG1-213-110



SLIDER LOAD (OLD)
86-ZG1-212-210



SLIDER LOAD (NEW)
86-ZG1-212-310

Interchange table	SLIDER LOAD	
Lever Load	86-ZG1-212-210	86-ZG1-212-310
86-ZG1-213-010	ja	nein
86-ZG1-213-110	ja	ja

ET- Name	ET- Nr.
Lever Load	86-ZG1-213-110
Slider Load	86-ZG1-212-310

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Service Information
SI-97-049-044

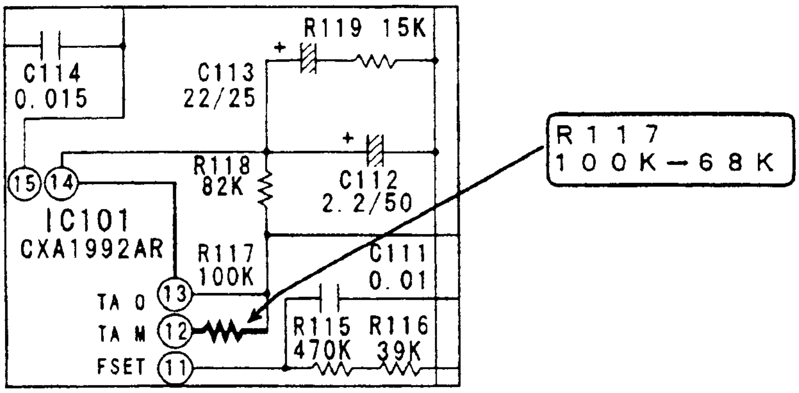
Hürth,den 08.01.1998

Modell: 6ZG- 1SDFNM (CD Mechanik) z.B. Z-VR750/ 950/ Z-R800

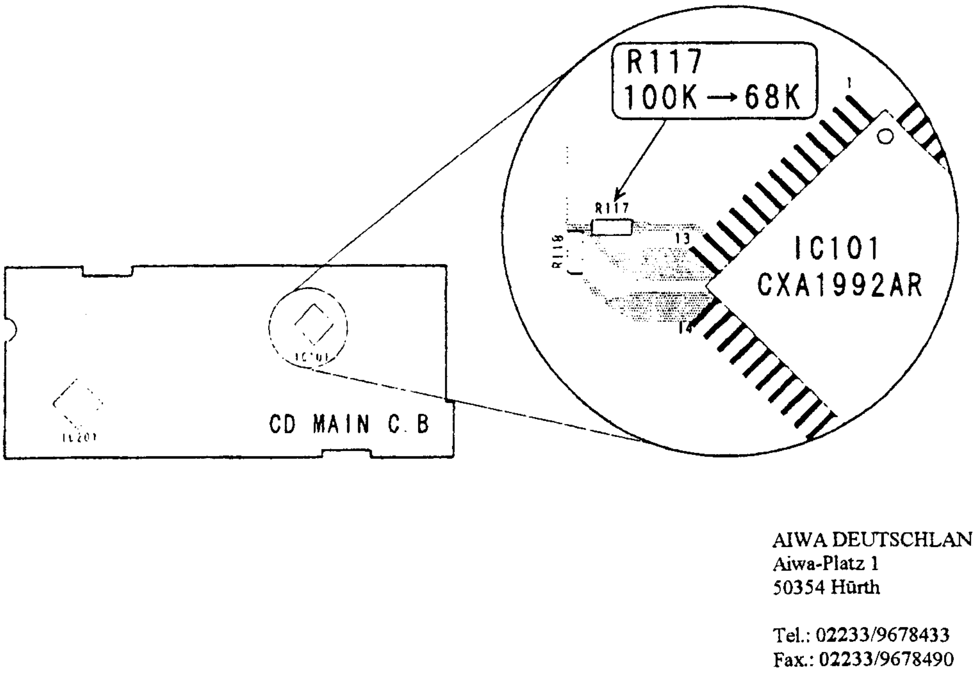
Problrm: Unerwartetes stoppen bei CD Random Wiederholfunktion.

Abhilfe: Ändern Sie den Widerstand R117 auf der CD Platine von 100KΩ auf 68KΩ.

Ref. Nr.	ET Name	ET Nr.
R117	C-Res, S68K- 1/10W J	88-118-683-010


R119 15K
C114
0.015
C113
22/25
R118
82K
C112
2.2/50
IC101
CXA1992AR
R117
100K
C111
0.01
TA O
TA M
FSET
R115
470K
R116
39K
15
14
13
12
11
R117
100K→68K

- Pattern diagram


R117
100K→68K
R117
R118
13
14
1
IC101
CXA1992AR
IC101
IC201
CD MAIN C.B

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サービス技術ニュース	
番号	連絡内容
G－　－	
G－　－	
G－　－	

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AIWA-01987

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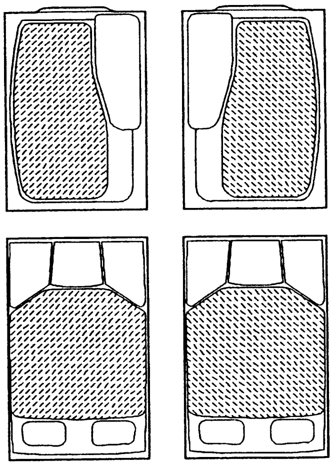
SERVICE

SPEAKER



SPEAKER

SERVICE MANUAL

- TYPE: English, Japanese

- This Service manual contains below models.

SX-SLM6 SX-SL300 SX-SL600 SX-SLAP1MK3 SX-SL800	SX-CR321 SX-CR421 SX-CR423	SX-C300 SX-C400	SX-R210 SX-R220 SX-R230 SX-R240 SX-R250 SX-R260	SX-Z24 SX-Z26 SX-Z27	SX-Z240 SX-Z260 SX-Z270 SX-Z280 SX-Z290	SX-FZ2600 SX-FZ2700 SX-FZ3400

SX-Z2890 SX-Z3250 SX-Z4400 SX-Z7400 SX-Z9400	SX-AZ2800 SX-AZ3450	SX-ANV900 SX-ANV8000	SX-NV200 SX-NV210 SX-NV300 SX-NV2000 SX-NV2100 SX-NV3000 SX-NV3001	SX-FNV500 SX-FNV700 SX-FNV800	SX-NAV70 SX-NAV80 SX-NAV90 SX-NAV700 SX-NAV800 SX-NAV900

SX-N340 SX-N410G SX-N3200 SX-N3150	SX-NAVH8 SX-NAVH9 SX-NAVH80 SX-NAVH90	SX-ANH9 SX-ANH90	SX-NK21 SX-FNK23	SX-NM9 SX-NM820	SX-FNH8	SX-FNF7 SX-FNF77

- SX-CR model's structures are as follows ;

SX-CR321	SX-CR421	SX-CR423
SX-C300 SX-R210	SX-C400 SX-R210	SX-C400 SX-R230

- This SPEAKER service manual is updated, so replace the previous SPEAKER service manual with this manual.

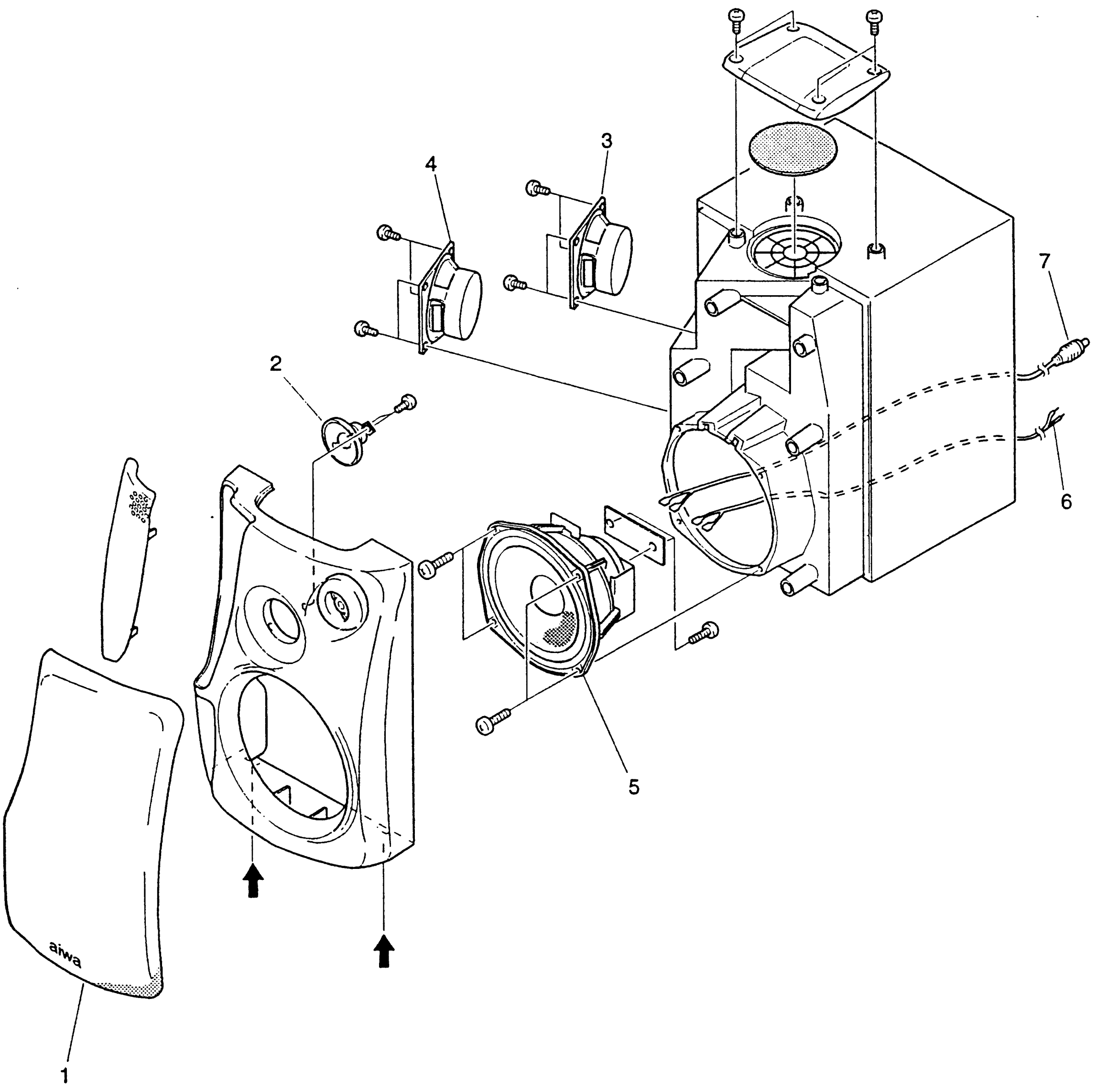
S/M Code No. 09-964-137-8FP

SX-ANV900 / ANV8000<900YJ, 900YL, 8000YU, 900Y, 900YJST, 900YST, 900YA, 900YJ3, 900YJ7>

SPEAKER DISASSEMBLY INSTRUCTIONS

矢印の位置にマイナスドライバーを差し込んで、パネルをはずして、各々のスピーカー・ユニットのビスを取り、スピーカー・ユニットをはずしてください。

Insert a flat - bladed screwdriver into the position indicated by the arrows and remove the panel.
Remove the screws of each speaker unit and then remove the speaker units.



SPEAKER PARTS LIST

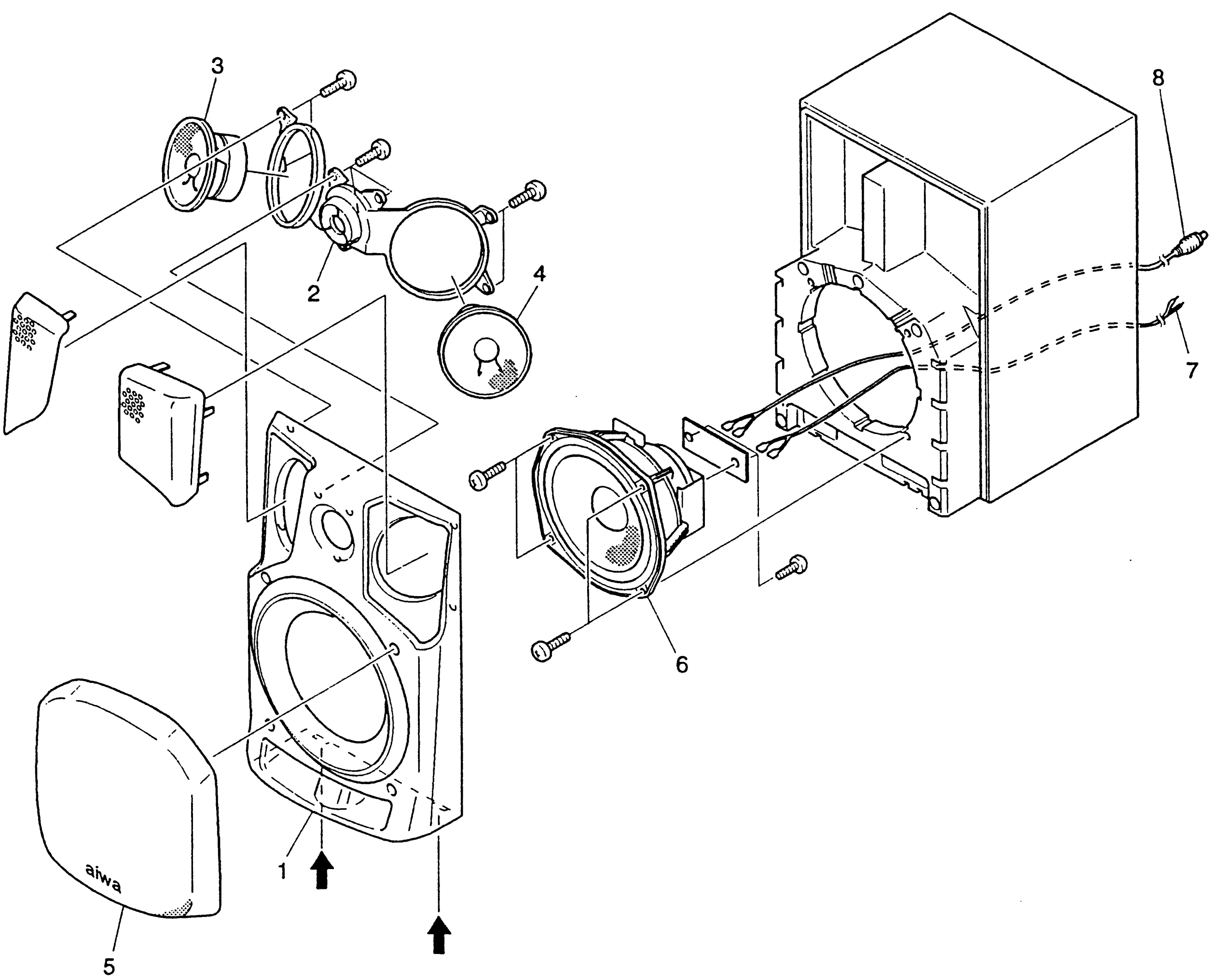
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS4-010-019		GRILL FRAME L ASSY
2	86-NS4-009-019		GRILL FRAME R ASSY
3	86-NS4-001-019		PANEL,FR L
4	86-NS4-002-019		PANEL,FR R
5	86-NS4-608-019		SPKR T 50<EXCEPT 8000YU>
6	86-NS4-604-019		SPKR M 80<EXCEPT 8000YU>
7	86-NS4-606-019		SPKR F 80<EXCEPT 8000YU>
8	86-NS4-602-019		SPKR W 140 H<900YJ,900YL,900YJST,900YJ>
8	86-NS4-612-019		SPKR W 140 L<8000YU>
8	86-NS4-610-019		SPKR W 140 M<900Y,900YST,900YA>
9	83-NS5-613-019		SPEAKER CORD ASSY
10	85-NS6-611-019		SPEAKER CORD Y/B

SX-FNV800<YJ, YL, Y, YJST, YABNL, YABN, YJSTCC, YJ3, YST, YJ7BNL, YJ7STL, YSTN> SPEAKER DISASSEMBLY INSTRUCTIONS

矢印の位置にマイナスドライバーを差し込んで、パネルをはずして、各々のスピーカー・ユニットのビスを取り、スピーカー・ユニットをはずしてください。

Insert a flat - bladed screwdriver into the position indicated by the arrows and remove the panel.
Remove the screws of each speaker unit and then remove the speaker units.



SPEAKER PARTS LIST

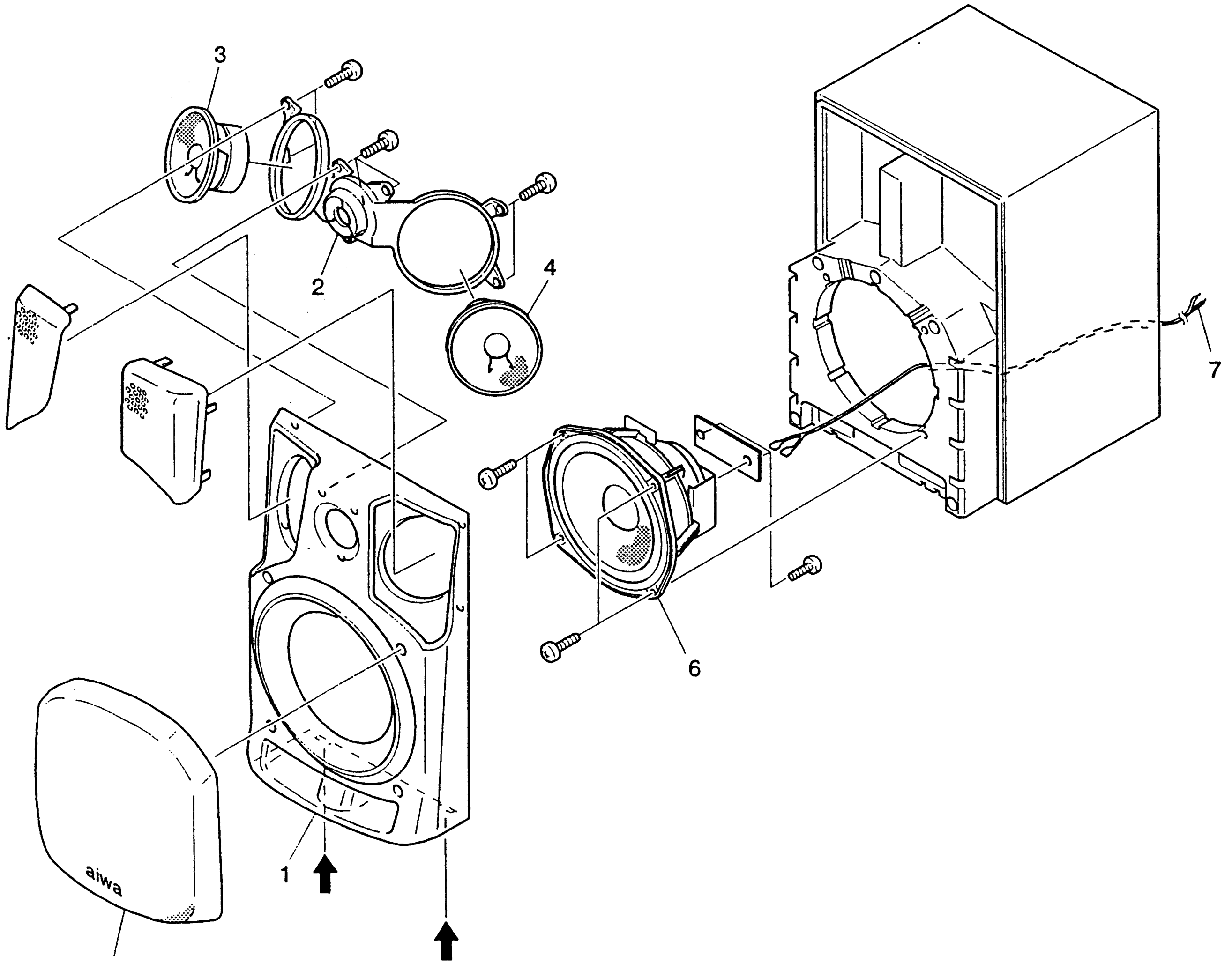
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS5-001-019		PANEL FR<EXCEPT YJST,YJSTCC,YST,YJ7STL,YSTN>
1	86-NS5-027-019		PANEL FR ST<YJST,YJSTCC,YST,YJ7STL,YSTN>
2	86-NS5-028-019		HLDR SQ ASSY
3	86-NS5-604-019		SPEAKER TWEETER
4	86-NS5-606-019		SPEAKER
5	86-NS5-007-019		GRILL FRAME ASSY
6	86-NS5-602-019		SPEAKER WOOFER<EXCEPT YABNL,YST>
6	86-NS6-602-019		SPEAKER WOOFER<YABNL,YST>
7	83-NS5-613-019		SPEAKER CORD ASSY
8	85-NS6-611-019		SPEAKER CORD Y/B

SX-FNV500 / FNV700 / FNK23<500YL, 700Y, 700YJ, FNK23YJST>
SPEAKER DISASSEMBLY INSTRUCTIONS

矢印の位置にマイナスドライバーを差し込んで、パネルをはずして、各々のスピーカー・ユニットのビスを取り、スピーカー・ユニットをはずしてください。

Insert a flat - bladed screwdriver into the position indicated by the arrows and remove the panel.
Remove the screws of each speaker unit and then remove the speaker units.



SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

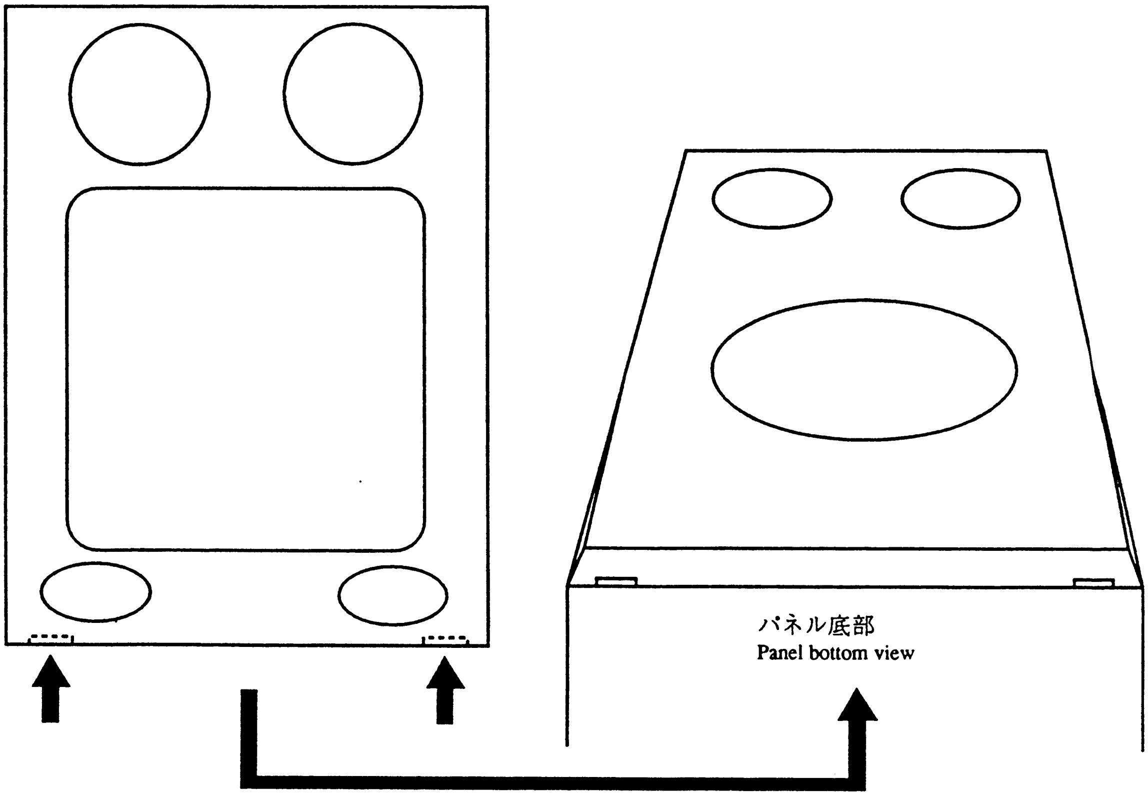
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS5-001-019		PANEL FR
2	86-NS5-028-019		HLDR SQ ASSY
3	86-NS5-604-019		SPEAKER TWEETER
4	86-NS5-606-019		SPEAKER
5	86-NS5-007-019		GRILL FRAME ASSY
6	86-NS5-608-019		SPEAKER WOOFER<700YJ,500YL>
6	86-NS6-602-019		SPEAKER WOOFER<700Y,FNK23YJST>
7	85-NS6-611-019		SPEAKER CORD Y/B

SPEAKER DISASSEMBLY INSTRUCTIONS

NOTE : Refer this disassembly instructions when servicing models for SX-FZ3400, SX-Z3250, SX-NV300/NV3000/NV3001, SX-NAV70/NAV700, SX-NAV90/NAV900 and SX-NAV80/NAV800.

矢印の位置にマイナスドライバーを差し込んで、パネルをはずして、各々のスピーカー・ユニットのビスを取り、スピーカー・ユニットをはずしてください。

Insert a flat - bladed screwdriver into the position indicated by the arrows and remove the panel.
Remove the screws of each speaker unit and then remove the speaker units.



SX-FZ3400<YJ, YL>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-VS2-004-010		PANEL FR
2	86-VS2-006-010		ADAPTOR ASSY
3	86-VS2-601-010		SPEAKER WOOFER
4	83-NS5-608-010		SPEAKER MID H
5	83-NS5-610-010		SPEAKER
6	86-VS2-009-010		GRILL FRAME ASSY
7	85-MS3-610-010		SPEAKER CORD ASSY Y/B
8	84-MS3-611-010		SPEAKER CORD ASSY

SX-Z3250<Y, YJ, YL>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-VS4-006-010		GRILL FRAME ASSY<YJ,YL>
1	85-VS4-012-010		GRILL FRAME ASSY E<Y>
2	85-VS4-001-010		PANEL FR R<YJ,YL>
3	85-VS4-004-010		PANEL FR L<YJ,YL>
4	86-NSS-003-010		PANEL TW ASSY<YJ,YL>
5	86-MSS-602-010		SPEAKER W 220<YJ,YL>
5	85-VS4-601-010		SPEAKER WOOFER<Y>
6	84-VS3-603-010		SPEAKER TW 60<YJ,YL>
6	85-VS4-603-010		SPEAKER TWEETER<Y>
7	85-VS4-605-010		SPEAKER CERAMIC<Y>
8	83-096-614-010		SPEAKER CORD<YJ,YL>

SX-NV300 / NV3000 / NV3001 / NK21 <300YJBNC, 300YLBNC, 300YBNC, 3000YUBNC, 300B, 3001YUWNC, 300YJBNCC, 300YBNY1, 300YJ7, 300YJBNC1, 300YJBNC1C, 3001YUWNT, 3000YUBNT, 300YBNY2, 300YLBNC1, 300YBNC, NK21YJSTNC>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NST-006-010	–	GRILL FRAME ASSY<EXCEPT YUBNC,YUWNC,YUWNT,NK21YJSTNC>
1	86-NSU-016-010		GRILL FRAME ASSY W<YUWNC,YUWNT>
1	86-NSU-006-010		GRILL FREAME ASSY D<EXCEPT YJBNC,YLBNC,YBNC,B,YUWNC,YJ7BNC,YBNY1,YJBNCC,YUWNT,YBNY2>
2	86-NST-001-010	–	PANEL FR R<EXCEPT YUBNC,YUWNC,YUWNT,NK21YJSTNC>
2	86-NSU-004-010		PANEL FR R D<YUBNC,YJBNC1,YJBNC1C,YUBNT,YLBNC1,YBNC1>
2	86-NSU-019-010		PANEL FR R ST<NK21YJSTNC>
3	86-NST-002-010	–	PANEL FR L<EXCEPT YUBNC,YUWNC,YUWNT,NK21YJSTNC>
3	86-NSU-005-010		PANEL FR L D<YUBNC,YJBNC1,YJBNC1C,YUBNT,YLBNC1,YBNC1>
3	86-NSU-020-010		PANEL FR L ST<NK21YJSTNC>
4	86-NSU-602-010		SPEAKER WOOFER<YBNY1,YBNY2>
4	86-NS5-608-010	–	SPEAKER WOOFER<EXCEPT YBNY1,YBNY2>
5	85-NS7-604-010	–	SPEAKER TWEETER<EXCEPT YBNY1,YBNY2>
5	86-NSU-604-010		SPEAKER TWEETER<YBNY1,YBNY2>
6	83-096-614-010	–	SPEAKER CORD
7	82-NSE-610-010	–	CERAMIC
8	83-NS8-009-010	–	DIAPHRAGM

SX-NAV70 / NAV700<70YJ, 70Y, 700YU, 70YSTNC, 70YBNY1, 70YBNY2, 70YSTNY1>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NST-013-010		PANEL FR L ST<YSTNC,YSTNY1>
1	86-NST-002-010		PANEL FR L<YJ,Y,700YU,YBNY1,YBNY2>
2	86-NST-001-010		PANEL FR R<YJ,Y,700YU,YBNY1,YBNY2>
2	86-NST-012-010		PANEL FR R ST<YSTNC,YSTNY1>
3	86-NST-003-010		PANEL BA
4	86-NST-006-010		GRILL FRAME ASSY
5	86-NST-608-010		SPEAKER W 140<YBNY1,YBNY2,YSTNY1>
5	86-NS5-608-010		SPEAKER W 140<Y,700YU,YSTNC>
5	86-NS5-602-010		SPEAKER W 140H<YJ>
6	86-NST-604-010		SPEAKER T 60<YJ,Y,700YU,YSTNC>
6	86-NST-610-010		SPEAKER T 60<YBNY1,YBNY2,YSTNY1>
7	82-NSE-610-010		CERAMIC
8	83-NS8-009-010		DIAPHRAGM
9	83-096-614-010		SPEAKER CORD

SX-NAV90 / NAV900<90YJ, 90Y, 90YST, 900YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NSR-005-010		GRILL FRAME ASSY R
2	86-NSR-006-010		GRILL FRAME ASSY L
3	86-NSR-009-010		PANEL FR R<EXCEPT YST>
3	86-NSR-016-010		PANEL FR R ST<YST>
4	86-NSR-010-010		PANEL FR L<EXCEPT YST>
4	86-NSR-017-010		PANEL FR L ST<YST>
5	86-NSR-602-010		SPEAKER W 140 H<EXCEPT Y,YST>
5	86-NSR-606-010		SPEAKER W 140<Y,YST>
6	86-NSR-604-010		SPEAKER TW 60 H
7	83-096-614-010		SPEAKER CORD
8	82-NSE-610-010		CERAMIC

SX-NAV80 / NAV800 / NM820<80YJBNC, 80YL, 80YBNC, 800YUBNC, 80YST, 800YUBNA, 820YJTNL, 820YTNL, 80YJ7, 80YBN, 80YJBNCC, 80YABNT, 80YABNM, 80B, 820YJBNL, 820B>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NSS-009-010	–	PANEL FR 80 R<EXCEPT YST,820YJTNL,820YTNL,820YJBNL,820B>
1	86-NSS-011-010		PANEL FR ST 80 R<YST>
2	86-NSS-010-010	–	PANEL FR 80 L<EXCEPT YST,820YJTNL,820YTNL,820YJBNL,820B>
2	86-NSS-012-010		PANEL FR ST 80 L<YST>
3	86-NSR-005-010	–	GRILL FRAME ASSY R<EXCEPT 820YJBNL,820B>
4	86-NSR-006-010	–	GRILL FRAME ASSY L<EXCEPT 820YJBNL,820B>
5	86-NSR-606-010		SPEAKER W 140<YBNC,800YUBNC,YST,800YUBNA>
5	86-NSS-602-010		SPEAKER W 140 H<YJBNC,YL,YJ7,YBN,YJBNCC,YABNT,YABNM>
5	86-NSM-602-010	–	SPEAKER W 160<820YJTNL,820YTNL,820YJBNL,820B>
6	86-NSM-604-010	–	SPEAKER TW 25<820YJTNL,820YTNL,820YJBNL,820B>
6	86-NSR-604-010		SPEAKER TW 60<EXCEPT 820YJTNL,820YTNL,820YJBNL,820B,80B>
7	82-NSE-610-010	–	CERAMIC<EXCEPT 820YJTNL,820YTNL,820YJBNL,820B>
8	83-096-614-010	–	SPEAKER CORD<EXCEPT 820YJTNL,820YTNL,820YJBNL,820B>
9	86-NSG-004-010	–	GRILL FRAME ASSY<820YJTNL,820YTNL,820YJBNL,820B>

SX-CR423<YJ, Y, YST>

NOTE : This SX-CR423 speaker contains SX-C400(center speaker) and SX-R230(rear speaker).
Refer to page 8 and 10 when servicing.

SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSX-001-010		PANEL FR(R230)<YJ,Y>
1	85-NSX-009-010		PANEL FR(R230)<YST>
2	85-NSX-002-010		PANEL REAR(R230)<YJ,Y>
2	85-NSX-010-010		PANEL REAR(R230)<YST>
3	85-NSX-005-010		GRILL FRAME ASSY(R230)
4	85-NSX-601-010		SPEAKER(R230)
5	81-VSA-010-010		SPEAKER CORD(R230)
6	85-NSY-001-010		PANEL FR(C400)<YJ,Y>
6	85-NSY-011-010		PANEL FR ST(C400)<YST>
7	85-NSY-002-010		PANEL REAR(C400)<YJ,Y>
7	85-NSY-012-010		PANEL REAR ST(C400)<YST>
8	85-NSY-010-010		GRILL FRAME ASSY(C400)
9	85-NSY-602-010		SPEAKER(C400)
10	83-NSM-010-010		SPEAKER CORD(C400)

SX-R230<YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSX-001-010		PANEL FR
2	85-NSX-002-010		PANEL REAR
3	81-VSA-010-010		SPEAKER CORD
4	85-NSX-005-010		GRILL FRAME ASSY
5	85-NSX-601-010		SPEAKER
6	85-NSX-901-010		IB YU(ESF)

SX-R240<Y, YJ>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSV-001-010		PANEL FR
2	85-NSX-005-010		GRILL FRAME ASSY
3	85-NSL-601-010		SPEAKER
4	81-VSA-010-010		SPEAKER CORD

SX-SR250 / R260<Y, YJ, YL, 260YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-NSX-011-010		PANEL FR R260<260YU>
2	83-NSX-004-010		GRILL FRAME ASSY
3	83-VS2-601-010		SPEAKER<EXCEPT 260YU>
3	83-NSX-601-010		SPEAKER<260YU>
4	81-VSA-010-010		SPEAKER CORD
5	83-NSX-008-010		PANEL TW ASSY
6	83-NSX-901-010		IB Y<EXCEPT 260YU>
6	83-NSX-902-010		IB YU(260)<260YU>

SX-SLM6<YT, YJ>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-CP2-003-010		GRILL FRAME ASSY
2	86-CP2-602-010		SPEAKER W
3	86-CP2-604-010		SPEAKER T

SX-SL300<B, W, D, G>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-CL7-112-010		PANEL FR<B,D>
1	86-CL7-116-010		PANEL FR W<W>
1	86-CL7-220-010		PANEL FR G<G>
2	86-CL7-113-010		GRILL FRAME
3	86-CL7-118-010		NET<B,D,G>
3	86-CL7-117-010		NET W<W>
4	86-CL7-119-010		SPEAKER
5	86-CL7-231-010		SPEAKER CODE
6	86-NS5-012-010		BADGE 35
7	86-CL7-232-010		CERAMIC

SX-SL600 / SLAP1MK3<Y, YJ, YL, YG, AP1MK3Y>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-CP6-001-010		PANEL FR R<EXCEPT YG,YL>
1	86-CP6-003-010		PANEL FR R G<YG>
1	86-CP6-005-010		PANEL FR R L<YL>
2	86-CP6-002-010		PANEL FR L<EXCEPT YG,YL>
2	86-CP6-004-010		PANEL FR L G<YG>
2	86-CP6-006-010		PANEL FR L L<YL>
3	86-CP6-602-010		SPEAKER WOOFER
4	86-CP6-603-010		SPEAKER TWEETER

SX-SL800<Y, YJ>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-CP5-001-010		PANEL FR R
2	86-CP5-002-010		PANEL FR L
3	86-CP5-005-010		GRILL FRAME ASSY R
4	86-CP5-006-010		GRILL FRAME ASSY L
5	86-CP5-604-010		SPEAKER MID
6	86-CP5-602-010		SPEAKER W
7	85-CP5-604-010		SPEAKER TW
8	83-096-614-010		SPEAKER CORD
9	85-CP5-611-010		SPEAKER CORD Y/B

SX-C300<Y, YJ, YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-NSM-007-010		GRILL FRAME ASSY
2	83-NSM-602-010		SPEAKER
3	83-NSM-010-010		SPEAKER CORD
4	83-NSM-901-010		IB Y<YJ,Y>
4	83-NSM-902-010		IB YU<YU>

SX-C400<YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSY-001-010		PANEL FR
2	85-NSY-002-010		PANEL REAR
3	85-NSY-010-010		GRILL FRAME ASSY
4	85-NSY-602-010		SPEAKER
6	83-NSM-010-010		SPEAKER CORD
7	85-NSY-901-010		IB YU(ESF)-400

SX-R210<Y, YJ,YU, YHS>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-VS3-001-010		CABI FRONT
2	83-VS3-004-010		GRILL FRAME ASSY
3	83-VS3-601-010		SPEAKER
4	81-VSA-010-010		SPEAKER CORD
5	81-VSA-009-010		CORD BUSH
6	87-351-099-010		SCREW VT+3-15
7	87-342-096-010		SCREW VT+3-10
8	87-302-124-010		SW+3.1-25
9	83-VS3-904-010		IB HS<YHS>
9	83-VS3-902-010		IB U<YU>
9	83-VS3-901-010		IB,Y<EXCEPT YU,YHS>

SX-R220 / SR220<Y, YJ, YJ1, YL, YL1, YU, SR220YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-VS3-004-010	–	GRILL FRAME ASSY
2	85-NSL-601-010	–	SPEAKER
3	83-VS3-901-110	–	IB Y<Y,YJ,YL>
3	83-VS3-902-110	–	IB U<YU>
3	85-NSL-902-010	–	IB Y<YJ1,YL1>
3	85-NSL-903-010	–	IB U<SR220YU>

SX-Z240 / Z24<Y, YL, YBNY1, YBNC, Z24YUBNC, Z24YUBNA>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MSU-001-010		PANEL FR<EXCEPT YBNY1,Z24YUBNA>
2	86-MSU-002-010		GRILL FRAME ASSY<EXCEPT YBNY1,Z24YUBNA>
2	86-MSU-011-010		GRILL FRAME ASSY<Z24YUBNA>
2	85-MS5-017-010		GRILL FRAME ASSY E<YBNY1>
3	85-MS5-603-010		SPEAKER W<EXCEPT YBNY1>
3	85-MS5-611-010		SPEAKER W<YBNY1>
4	85-MS5-613-010		SPEAKER TW<YBNY1>
4	85-MS5-605-010		SPEAKER TW<EXCEPT YBNY1>
5	85-MS5-607-010		CERAMIC<EXCEPT YBNY1,Z24YUBNA>

SX-Z260 / Z26<Y, Z26YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MSR-003-010		PANEL FR R<Z26YU>
2	86-MSR-004-010		PANEL FR L<Z26YU>
3	86-MSN-004-010		GRILL FRAME ASSY<Z26YU>
3	86-MSR-010-010		GRILL FRAME Y1 ASSY<Y>
4	86-MSM-601-010		SPEAKER W<Z26YU>
4	86-VSS-601-010		SPEAKER W<Y>
5	84-NS6-604-010		SPEAKER TW<Z26YU>
5	86-VSR-603-010		SPEAKER TW<Y>
6	86-VSR-605-010		CERAMIC<Y>

SX-Z270 / Z27<YBNL, YBNY1, Z27YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MSN-001-010		PANEL FR R<EXCEPT YBNY1>
2	86-MSN-002-010		PANEL FR L<EXCEPT YBNY1>
3	86-MSP-001-010		PANEL TW R<EXCEPT YBNY1>
4	86-MSP-002-010		PANEL TW L<EXCEPT YBNY1>
5	86-MSR-601-010		SPEAKER W<YBNY1>
5	86-VS2-601-010		SPEAKER W<EXCEPT YBNY1>
6	84-VS3-603-010		SPEAKER TW<EXCEPT YBNY1>
6	86-MSR-603-010		SPEAKER TW<YBNY1>
7	86-MSR-604-010		CERAMIC<YBNY1>
8	86-MSU-004-010		GRILL FRAME ASSY<EXCEPT YBNY1>
8	86-MSP-010-010		GRILL FRAME ASSY<YBNY1>

SX-Z280<Y, YJ>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MSN-001-010		PANEL FR R<EXCEPT Y>
2	86-MSN-002-010		PANEL FR L<EXCEPT Y>
3	86-MSN-004-010		GRILL FRAME ASSY<EXCEPT Y>
3	86-MSP-010-010		GRILL FRAME ASSY<Y>
4	86-VS2-601-010		SPEAKER W<EXCEPT Y>
4	86-VSP-601-010		SPEAKER W 160<Y>
5	86-VSR-603-010		SPEAKER T 60<Y>
5	84-VS3-603-010		SPEAKER TW<EXCEPT Y>
6	86-VSR-605-010		CERAMIC<Y>

SX-Z290<YJ, YL, YJ7>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MSN-001-010		PANEL FR R<EXCEPT YJ7>
1	86-MSN-013-010		PANEL FR ST R<YJ7>
2	86-MSN-002-010		PANEL FR L<EXCEPT YJ7>
2	86-MSN-014-010		PANEL FR ST L<YJ7>
3	86-MSN-003-010		PANEL BA
4	86-MSN-004-010		GRILL FRAME ASSY
5	86-MSP-602-010		SPEAKER W YJ<EXCEPT YL>
5	86-MSP-601-010		SPEAKER W YL<YL>
6	86-NS6-604-010		SPEAKER TW

SX-FZ2600<Y, YJ, YL, YJST>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MS5-001-010		PANEL FR<EXCEPT YJST>
1	86-MS5-012-010		PANEL FR ST<YJST>
2	86-MS5-019-010		HLDR SQ ASSY
3	86-MS5-017-010		GRILL FRAME ASSY
4	86-MS5-603-010		SPEAKER W YB<EXCEPT YL>
4	86-MS5-609-010		SPEAKER W YL<YL>
5	86-MS5-605-010		SPEAKER TW
6	86-MS5-607-010		SPEAKER
7	85-MS3-611-010		SPEAKER CORD ASSY
8	85-MS3-610-010		SPEAKER CORD ASSY Y/B

SX-FZ2700<Y, YJ, YL, YJST>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-VS2-001-010		PANEL FR<EXCEPT YJST>
2	86-VS2-002-010		PANEL BA
3	86-VS2-008-010		GRILL FRAME ASSY
4	86-VS2-603-010		SPEAKER W<EXCEPT Y>
4	86-VS2-605-010		SPEAKER W<Y>
5	86-NS5-608-010		SPEAKER TW
6	86-NS5-610-010		SPEAKER

SX-AZ2800<Y, YJ, YL, YJ7, YJST, YJ7ST>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MS3-001-010		PANEL FR R<EXCEPT YJST,YJ7ST>
1	86-MS3-023-010		PANEL FR ST R<YJST,YJ7ST>
2	86-MS3-002-010		PANEL FR L<EXCEPT YJST,YJ7ST>
2	86-MS3-024-010		PANEL FR ST L<YJST,YJ7ST>
3	86-MS3-025-010		GRILL FRAME ASSY R
4	86-MS3-026-010		GRILL FRAME ASSY L
5	86-MS3-011-010		PANEL TW R
6	86-MS3-012-010		PANEL TW L
6	86-MS3-601-010		SPEAKER W
7	86-NS4-604-010		SPEAKER MID
8	86-NS4-606-010		SPEAKER
9	86-NS4-608-010		SPEAKER TW
10	85-NS6-611-010		SPEAKER CORD Y/B
11	85-NS5-613-010		SPEAKER CORD ASSY

SX-AZ3450<Y>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-MS3-025-010		GRILL FRAME ASSY R
2	86-MS3-026-010		GRILL FRAME ASSY L
3	86-MS3-001-010		PANEL FR R
4	86-MS3-002-010		PANEL FR L
5	86-NS3-601-010		SPEAKER W
6	86-NS4-604-010		SPEAKER MID
7	86-VS4-606-010		SPEAKER
8	86-NS4-608-010		SPEAKER TW

SX-Z4400<YBNY, YBNY1, YJBNL>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-VS4-011-010		GRILL FRAME ASSY<YBNY,YBNY1>
1	85-VS4-006-010		GRILL FRAME ASSY<YJBNL>
2	85-VS4-001-010		PANEL FR R<YJBNL>
3	85-VS4-004-010		PANEL FR L<YJBNL>
4	85-VS4-601-010		SPEAKER W<YBNY1>
4	86-VSR-602-010		SPEAKER W<YJBNL,YBNY>
4	86-VSR-602-010		SPEAKER W<YBNY>
5	85-VS4-603-010		SPEAKER T<YBNY1>
5	86-VSR-603-010		SPEAKER TW<YBNY>
5	84-VS3-603-010		SPEAKER TW<YJBNL>
6	83-096-614-010		SPEAKER CORD<YJBNL>
7	86-VSR-605-010		CERAMIC<YBNY>
7	85-VS4-605-010		CERAMIC<YBNY1>

SX-Z7400<Y>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-VSM-601-010		SPEAKER W
2	86-MSR-603-010		SPEAKER TW
3	86-MSR-604-010		CERAMIC
4	86-MSP-010-010		GRILLE FRAM ASSY

SX-Z9400<Y, YJ, YL>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-VS1-002-010		PANEL W
2	86-VS1-003-010		PANEL TW ASSY
3	86-VS1-009-010		GRILL FRAME ASSY
4	86-VS1-602-010		SPEAKER WOOFER
5	84-VS3-603-010		SPEAKER TWEETER
6	83-149-611-010		TERMINAL
7	81-672-612-010		SPEAKER CORD

SX-NV200 / NV2000<Y, YJ, YL, NV2000YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-CPC-003-010		GRILL FRAME ASSY R
2	86-CPC-006-010		GRILL FRAME ASSY L
3	86-CPC-605-010		SPEAKER

SX-NV210 / NV2100<YBNC, YBNC1, YJ, YL, NV2100YUBNC, NV2100YUBNC1>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NSZ-001-010		PANEL,FR<EXCEPT YBNC>
2	86-NSZ-601-010		SPEAKER,120<NV2100YUBNC>
2	86-NSZ-603-010		SPEAKER,120H<YBNC1>
2	86-NSZ-605-010		SPEAKER,120D<NV2100YUBNC1>
2	86-NSZ-607-010		SPEAKER,120DH<YJ,YL,YBNC>
3	86-NSZ-602-010		SPEAKER,CERA 14<EXCEPT YBNC>
4	86-NSZ-003-010		NET<EXCEPT YBNC>
5	86-NSZ-610-010		CODE,SP

SX-NAVH8 / NAVH80<Y, YJ, YT, TN, T1, T2, 80YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NSM-001-010		PANEL FR
2	86-NSM-004-010		GRILL FRAME ASSY
3	83-096-614-010		SPEAKER CORD
4	86-NS2-602-010		SPEAKER W 140
5	83-MS2-603-010		SPEAKER TW 60

SX-NAVH9 / NAVH90 / NM9<Y, YJ, YL, YT, YJ7, 90YU, NM9YT>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NSM-001-010		PANEL FR<EXCEPT NM9YT>
2	86-NSM-004-010		GRILL FRAME ASSY
3	83-096-614-010		SPEAKER CORD
4	86-NS2-602-010		SPEAKER W 140<EXCEPT NM9YT>
4	86-NSM-602-010		SPEAKER W 160<NM9YT>
5	86-NSM-604-010		SPEAKER TW 25<NM9YT>
5	83-MS2-603-010		SPEAKER TW 60<EXCEPT NM9YT>
6	86-NSM-610-010		TERMINAL ASSY<EXCEPT NM9YT>
6	85-NSG-610-010		TERMINAL ASSY<NM9YT>

SX-ANH9 / ANH90<Y, YJ, YL, YJ7, ANH90YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS1-001-010		PANEL FR R
2	86-NS1-002-010		PANEL FR L
3	86-NS1-010-010		GRILL FRAME ASSY R
4	86-NS1-011-010		GRILL FRAME ASSY L
5	86-NS1-602-010		SPEAKER W 140H
6	86-NS4-604-010		SPEAKER M 80
7	86-NS4-606-010		SPEAKER S 80
8	86-NS4-608-010		SPEAKER T 50

SX-FNH8<YJ, YL>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS2-001-010		PANEL FR
2	86-NS2-016-010		PANEL TW ASSY
3	86-NS2-006-010		GRILL FRAME ASSY
4	86-NS1-602-010		SPEAKER W 140 H
5	83-NS5-608-010		SPEAKER TW
6	83-NS5-610-010		SPEAKER

SX-N340 / N410G / N3150 / N3200<340YB, 340YBNC, 340YJBNC, 340YJABN, 410GB, 3150YU, 3200YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-NS7-002-010		PANEL FR L<3200YU,340YBNC,340YJABN,3150YU>
1	82-NS7-007-010		PANEL FR L H<340YJBNC,340YBNC>
1	82-NS7-017-010	–	PANEL FR L 410<410GB>
2	82-NS7-003-010		PANEL FR R<3200YU,340YBNC,340YJABN,3150YU>
2	82-NS7-008-010		PANEL FR R H<340YJBNC,340YBNC>
2	82-NS7-018-010	–	PANEL FR R 410<410GB>
3	82-NS7-014-010	–	GRILL FRAME ASSY L
4	82-NS7-015-010	–	GRILL FRAME ASSY R
5	83-NS2-602-010	–	SPEAKER WOOFER
6	83-NS2-604-010	–	SPEAKER TWEETER
7	81-MSE-610-010	–	CERAMIC
8	83-096-614-010	–	SPEAKER CORD

SX-FNF77 / FNF77<Y, YJ, YL, YJ7, YJST, FNF77/YU>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NSA-001-010		PANEL FR <EXCEPT YJST>
1	86-NSA-013-010		PANEL FR ST<YJST>
2	86-NSA-003-010		GRILL FRAME ASSY
3	86-NSA-007-010		PANEL,TW
4	86-NSA-602-010		SPEAKER,W 160<EXCEPT Y,YU>
4	86-NSA-608-010		SPERAKER,W 160H<Y,YU>
5	86-NS5-604-010		SPEAKER,T 80<EXCEPT Y,YU>
5	86-NSA-610-010		SPEAKER,T 60H<Y,YU>
6	86-NS5-606-010		SPEAKER,80
7	86-NSA-611-010		SPEAKER CODE

SX-Z2890<YJ>
SPEAKER PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-MSD-002-010		GRILL,ASSY
2	85-MSD-005-010		PANEL,W
3	85-MSD-006-010		PANEL,M
4	85-MSD-007-010		PANEL,T ASSY
5	85-MSD-601-010		SPEAKER,WOOFER
6	83-NS2-603-010		SPERAKER,TWEETER
7	81-672-612-010		SPEAKER CODE

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
	SERGE SUPPRESSOR
	CAP, CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
	ARM, SHAFT
	GUIDE, SHAFT
	STRAP
	S-SCREW
	HINGE
	S-SCREW
	SCREW, SERPART

サービス技術ニュース	
番号	連絡内容
G－　－	
G－　－	
G－　－	

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